Report 2003

The Situation in Primary and Secondary Education in Norway

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UTDANNINGS- OG FORSKNINGSDEPARTEMENTET

Ministry of Education and Research

Preface

Based on national and international surveys and research as of June 2003, the present document outlines important challenges posed to the Norwegian school system. The ambition with the document is to contribute to a knowledge-based understanding of the reality of the challenges and alternative solutions in Norwegian basic training. The document focuses on national and international surveys of student achievement, and central findings of Norwegian and international research about factors that further the learning of students. In Norway little research has been carried out on this theme. Still, much of the international research that is presented will be relevant in relation to Norwegian conditions. Indeed, the conclusions of the few Norwegian research projects carried out within the field, do generally confirm findings of international research. In the present document, an emphasis is put on findings which have been documented in a number of research projects from different countries, including Norway when possible. An attempt has also been made to emphasise research which has been published in international journals. An exception is made with regard to the evaluation of the Norwegian reform of compulsory education in 1997 (Reform 97), which by and large is too new to have reached through a quality control of this kind.

Compared to the first version of the present document, which was published in November 2002, a number of changes have been made. First and foremost results from new research, like some projects from the evaluation of Reform 97 and from an international survey of the reading abilities of 10-year olds, have been included. Thus, the document has got a stronger twist towards primary and lower secondary school, and to a much smaller extent it covers higher secondary education. Furthermore, in accordance with what areas the Government wants to prioritise, a shift in emphasis on various themes has been made. Also, constructive feed-back to the former version of the document have been taken into consideration.

We have every reason to be proud of the Norwegian school system, but we shall not conceal that there are challenges. All the time we must work for development and improvement. It is my wish that this document may contribute to a constructive debate on how we may create an even better school in Norway.

Kristin Clemet

Minister of Education and Research

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Summary

The Norwegian School System Possesses many Qualities

Norway was early in creating a school for all children and youth. We have achieved a high level of education among the population by ensuring that children and youth have access to a school free of charge all over the country. According to international measures, we have a low drop-out rate and, regardless of parents' economy, good possibilities for further education after compulsory school.

We have an including school, where nearly all children and youth with special needs in the main are integrated into the ordinary school, where the large majority of the enjoy being at school, and where most parents are satisfied with both teachers and the school. Norwegian students feel relatively safe at school and experience less harassment than students in most other countries. They have good knowledge about, and positive attitudes towards, democracy and democratic values. All this constitutes qualities vital to a democratic, well-functioning knowledge society.

However, Weak Learning Outcomes in Basic Subjects

Nevertheless it has to be taken seriously that many Norwegian students do possess relatively weak basic skills. The two last big international studies of students' skills in the basic subjects – PIRLS and PISA – were carried out in 2001 and 2000. PIRLS surveys the reading abilities of 10-year olds in 35 countries. The Norwegian results are around the international average, but behind all countries natural to make comparisons with. Among all the countries, Sweden gets the best results. The PISA survey constitutes the most comprehensive international study so far, and it measures what is called functional competence in reading, natural sciences and mathematics among 15-year olds. Among 31 countries Norway is no. 17 in mathematics and no. 13 in reading and natural sciences, whereas Finland is on the top.

In all countries it is the case that boys on average have weaker reading skills than girls have, and that children of parents with low education perform more weakly than the average. Also, in most countries, minority language students score lower than students from the majority. The results from PISA and PIRLS, and the recently terminated evaluation of Reform 97, show that Norway has not succeeded particularly well in evening out these differences. On the contrary Norway draws attention as one of the countries where a big group of students do not possess elementary skills. An entire 20 per cent of the Norwegian 10-year olds have not developed elementary reading abilities (against 4 per cent in Sweden), and 17.5 per cent of 15-year olds have reading problems to such an extent that OECD conludes it may hamper their further education (in Finland the figure is 7 per cent). Moreover, it goes without saying that weak skills will also affect their possibilities for full participation in work and social life at large.

The international studies show that no conflict exists between quality and equality. On the contrary, differences in average between the countries is to a large extent connected to the ability to reach the weaker students.

Despite Good Social and Material Conditions

Material resources and social conditions cannot make up the explanation for the partly weak learning outcomes within the Norwegian school system. Norway has good conditions for creating a school of quality. Norway is a rich country with highly educated adults. Few countries spend more money on the school than Norway. I 1999 the expenditure for each student in primary school were 43 per cent above the average in OECD (measured in

purchasing power so as to take into consideration Norway's high level of costs), 42 per cent above the average in lower secondary school. The high level of spending in the Norwegian school system, when compared to other countries, is only to a small extent caused by Norwegian geography, but mainly by the fact that we have relatively many teachers in comparison to other countries. In the OECD countries there is on average between 40 and 50 per cent more students per teacher than in Norway. The integration policy may possibly be one reason for the high teacher density. However, our high national income probably constitutes an even more important explanatory factor.

International and Norwegian research shows that more resources spent on school do not automatically lead to improved learning for the students. The reasons for this may be many. For instance, lack of supervision or incentives may result in an increase in resources being spent for many other purposes than furthering the students' learning. Furthermore, rigid rules about how education is to be organised may obstruct a good use of the resources. Examples of such rules may be size of the class, distribution of subjects and lessons, demands to methods and the teachers' contract of employment.

A weak relationship between resources and results may also be owing to a lack of knowledge and competence in schools about how resources are best converted into the students' learning. For instance, researchers find that Norwegian teachers spend a very large part of the time in the classroom going around and helping students individually, when they are working on exercises. The result is that the teacher explains the same thing a number of times. Researchers ask whether it would not be possible to organise teaching in a more effective way.

Increase in resources are by and large used for reducing the sizes of the classes or for putting more teachers into the same class. This involves high costs with little return. The reason why it is done, nevertheless, may be partly because it improves the work situation of the teachers, and partly because the school management and the teachers lack knowledge about alternative ways of spending the resources, and partly because many schools are not free to convert teaching salaries for the extra teacher into competence development for the other teachers, or any other input.

We will always be able to find cases where more money will lead to better results, and cases where spending of money may be reduced without this affecting the results. It will always, regardless of the level of expenditure, be of decisive importance *how the resources are utilised*. This is especially the case, when there are resources at hand of the magnitude spent on the Norwegian school system. In order to obtain a better school, it is therefore necessary that focus is moved from the level of resources to conditions that we know will give us better results.

What can be Done?

Research concerning good schools and what gives the students good learning does not offer any definite answer to what can be done to improve the results in Norwegian schools. It has, however, been documented that good schools – schools which give the students extraordinarily good learning – have certain features in common. Head teachers and teachers in that kind of schools look upon teaching and learning as the primary purpose of the school, and they have high expectations with regard to the progress of the students' proficiency, independent of their social background. Also schools like these have social rules which are enforced consistently, and they reward positive behaviour.

Research shows, unequivocally, that the teacher is the most important factor in creating a good school. It has been proven that a good teacher can give students one and a half year's

progression within a school year, whereas a bad teacher only helps them half a year ahead. Good education and formal competence in subject and pedagogy is a necessary, however not a sufficient, basis for becoming a good teacher. In addition, a good teacher possesses certain personal qualities and motivation.

Furthermore, it seems to be well documented that the answer does not lie in searching for the pedagogically ideal method – a method like that does not exist. Many roads lead to the goal, and recent Norwegian research indicates that many teachers are a bit too much concerned with what pedagogical methods are to be used, and to a lesser extent with what is supposed to be the goal of the teaching. Researchers find that it is often unclear what is supposed to come out of the various activities in the form of learning. Some teachers have vague expectations and standards, and are reluctant to give corrective feed-back. Hence the students miss out on many opportunities for learning, and it is reasonable to believe that they acquire a mistaken understanding of their own efforts.

In the school of today an extended use of new working methods, like theme based teaching and project work, is employed. Research, however, indicates that many teachers and students do not fully master these working methods. International studies document that many Norwegian teachers only to a small extent have a conscious strategy for the teaching, and that the students only to a small extent master strategies for learning – they have not learnt how to learn. The fact that the students then are supposed to take responsibility for their own learning, occasionally seems to lead to exemption of liability for the teachers and the school. In this case it is reasonable to believe that the road to weak efforts is short for those students who are not highly motivated.

Teacher training is important, but research shows in all clarity that a good school is not created only by reforming teacher training. First of all the teaching profession must be attractive in a way that will attract those who possess the best personal and professional prerequisites for becoming a good teacher. Furthermore, the teacher, like any other employee, must develop constantly. In order for them to be able to use their abilities and competence in the best possible way, they must encounter a work place that has clear goals and expectations, which supports, inspires and gives feed-back during the daily work, and which rewards good efforts. For this reason school leaders and local education authority have an important role to play in the development of quality. National authorities may contribute, not only through the financing of the school, or by setting national goals in the form of legislation and curriculua, but also by developing a national infrastructure that renders possible local participation and development.

Research shows that it may be favourable to students' learning to give schools and municipalities more freedom to organise themselves in the way they find best, but that national authorities ought to set the goals and to take care to make a system which makes it possible to assess whether the national goals are reached for each individual student, school and municipality/county. Therefore, the Ministry of Education and Research, among other things, works on a simplification of today's legislation, establishment of a more appropriate organisation of the state educational administration and a national system for quality assessment and quality development.

1. Our Potential is High

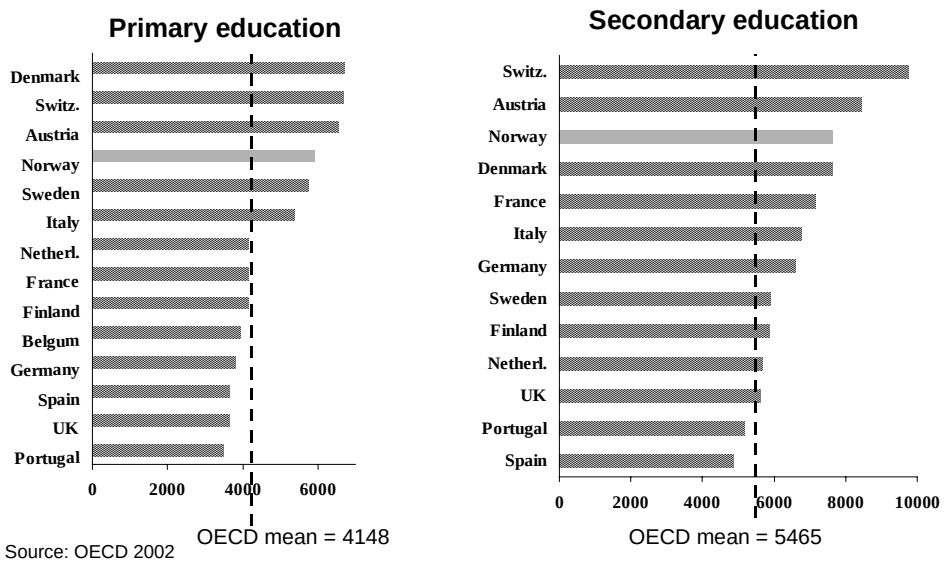
In the Norwegian country report from the international PISA-Study, Norway's potential for having a high-achieving education system are summed up as follows (Lie et al. 2001):

- Norway is one of the richest countries in the world.
- Few countries spend more money, proportionally, on education.
- The idea about a comprehensive school has characterised the Norwegian school system for more than a hundred years. Development towards education for all has been one of the most important goals of the school.
- Norway has an adult population of highly educated people, and Norwegian adults belong to the world elite with regard to measured reading competence.

1.1. Resources Invested in the Norwegian School System

Chart 1.1 shows expenditure per student in Norway compared to a number of other OECD-countries. In order to provide a realistic picture of the resources spent within the sector on teaching staff, materials and buildings, the expenditure are adjusted for the general level of costs in the different countries. Norway belongs to the group of countries that spend most resources on education. Other countries within this group are Switzerland, Austria, Denmark and USA. In 1999 Norway was 43 per cent above average of the OECD-countries within primary school and 32 per cent above average within upper secondary education (Chart 1.1). We are also considerably above countries that it may be natural to compare ourselves with, like Finland, The Netherlands and England.

Chart 1.1: Annual expenditure per student in primary education (left) and secondary education (right). US$, purchasing parity, 1999



Source: OECD 2002

The figures for upper secondary education are not immediatly comparable, as some countries – among them Norway and the other high cost countries – have integrated the relatively resource demanding vocational education and training into upper secondary education. In other countries this kind of training is placed entirely, or partially, outside the ordinary school

system. It has, however, been well documented that we spend more resources on primary and lower secondary school, than what is found in most other countries.

The spending of resources, the way it is illustrated in Chart 1.1, includes all education within both public and private educational institutions. In Norway, the public authorities are almost entirely in charge of this investment of resources. It is not unusual that private means cover about 10 per cent of the basic training within the OECD-area, whereas this share is less than 1 per cent for Norway and a few other countries.

The average figures that international comparisons are based on, conceal the relatively big differences in resource spending between municipalities and between counties in Norway. Nevertheless, municipalities that spend a lot of resources on education are generally small, hence the large majority of the students (about 80 per cent) go to schools with an almost identical level of resources.

Report to the Storting, No. 33 (2002 – 2003) *About the Resource Situation within Basic Training etc.* (St.meld. nr. 33 (2002 – 2003)) provides a description of the resource development over the last years within primary and secondary education. The Report concludes that the spending of resources within the sector is characterised by a high level and considerable stability in the period from 1997 to 2002. The development indicates that the sector has been prioritised and relatively well protected against cutbacks. At the same time a weak decline in resource spending is registered in the school year 2002/03. Among other things, this has happened through less use of extra teaching resources and special education lessons, at the same time as the size of the classes has increased somewhat. It is also pointed out that a future strong growth in the number of students within upper secondary education, will demand an increase in resources on this level in the coming years.

1.2 Explanations for Norway's high Level of Expenditure

Geography

On average Norway has small schools because of its geography. No dramatic changes in this picture are expected. The pattern of settlement and the population structure explain about 75 per cent of the differences in use of resources between the municipalities (Borge et al. 2003). As mentioned above, it is the small municipalities that stand out with the largest expenditure. These do, however, represent such a small share of the total expenditure for education in Norway that they do not affect the average to any special degree. If we remove the municipalities with particularly small schools, or schools with particularly small classes, from the calculation, the average expenditure within the Norwegian school system decline only vaguely. The resource spending within the 10 largest municipalities is relatively extensive in an international context; about 25 per cent above the OECD-average (adjusted for our high level of costs).

Integration

Norway is far from being alone in having chosen a high degree of integration of students with special needs, even though Norway has been ahead. There is a general turn towards integration in most parts of Europe. Spain, Italy, Greece and Portugal have more integration than Norway. Sweden is in a middle-position, and has special schools which are physically integrated with other schools, and where the students may recieve lessons in both places. In Norway, about 0.5 per cent of the students in primary school go to special schools, against 1.3 per cent in Sweden. Some countries have chosen a mixed system, where some of the special schools have been maintained, like in Denmark (1.5 per cent of the students) and Finland (3.7

per cent). Other countries, like The Netherlands, Belgium and Germany, teach the great majority of students with a need for special education in special schools (Eurydice 2002).

International comparisons of expenditure include all students, no matter if they go to ordinary schools or special schools. If the policy of integration were the cause of our high expenditure, it must be because an integrated place is more expensive than a place in a special school. This is not obvious. The special schools are small and thus expensive to run. Seen in isolation, this should indicate that the integration line reduces the total level of expenditure. On the other hand, there are two conditions that pull in the opposite direction. It may be costly to organise a large number of schools for a small number of students. Furthermore, the financing of special education is organised in such a way that the schools may get incentives to utilize the arrangement in order to provide the school with extra funds for the ordinary teaching activities. Hence the total effect of integration on expenditure is unclear. Commissioned by the teachers' union and the association of local authorities, the Econ Centre for Economic Analysis has prepared a comparative report on educational expenditure. The report finds no relationship between level of expenditure and degree of integration in different countries (Econ 2003).

A group that demands considerable resources is minority language students. This fact again contributes to larger expenditure, but does not explain Norway's relative position. Quite on the contrary. The share of minority language students is bigger in a number of countries that we compare ourselves with. Neither are the extra resources infused into the Norwegian school system significantly distinguishable from those of other countries. As an illustration, it could be mentioned that in The Netherlands, more than 15 percent of the students in primary school has a minority language background. In that country, the State estimates a unit price for such students that lies 90 per cent above the rate for the remaining students. Still, The Netherlands' expenditure for basic training are below the average in the OECD. In Norway, in comparison, less than 7 per cent of the students has a minority language background. Also the Econ Report did not find any relationship between the level of expenditure and the amount of minority language students in the countries analysed.

High-cost country

The comparisons of expenditure above have been converted into purchasing power. This implies that the generally high level of costs in Norway ought to have been captured and thus cannot contribute to an explanation of the differences.

The salaries of Norwegian teachers have been relatively low when measured against purchasing power. In year 2000 the initial salary for teachers in primary and lower secondary education was somewhat higher than the average in OECD, and on the OECD average in upper secondary education. On the other hand, salaries of those with 15 years of experience, and maximum salaries respectively were considerably (10 to 25 per cent) below the OECD-average (OECD 2002). Especially the difference was large within upper secondary education.

For long periods of time the trend in teacher salaries has been unfavourable. It has been weaker than that within the private sector, and it has also been weaker than that for other public employees. This is mainly because of a lack of local negotiations within the school sector. However, due to special agreements during the last couple of years where teachers have agreed to teach more hours, and also due to the introduction of local negotiations, teachers' salaries in Norway have risen considerably. In 2001, the average salary for staff within the school system was 14.4 per cent above the level of 1999, and in 2002 it increased with a further 10.5 per cent (Statistics Norway, 2003). An average monthly salary in school

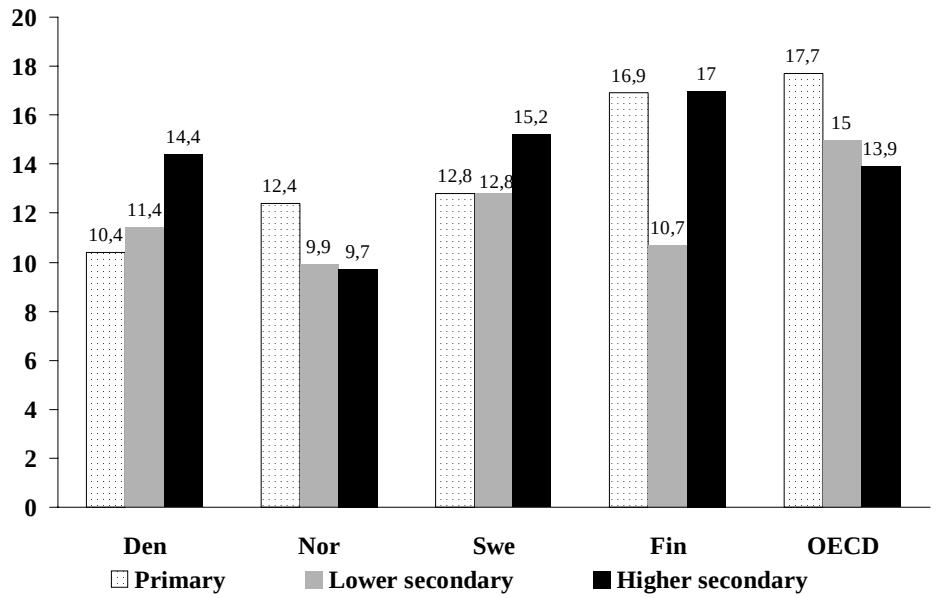
per 1st of October 2002 amounted to NOK 28.808. This is 10 per cent higher than that in the manufacturing sector.

Student – Teacher Ratio

In all countries expenditures for education are dominated by teachers' salaries, which make up about 80 per cent of the running costs within the educational sector. Econ (2003) thus found that, as a rule, the countries that spend few resources on education had a high number of students per teacher, whereas the opposite was the case for countries that spend a lot of resources on education.

Our high level of expenditure is mainly due to many teachers in proportion to the number of students in the Norwegian school system. In the OECD-countries there are, on average, between 40 and 50 per cent more students per teacher than in Norway (Chart 1.2). In recent years this figure has remained stable. Because of the fact that the small municipalities have relatively few students, the scattered pattern of settlement can only account for a modest part of the teacher density in Norway, whereas integration of resource demanding students in normal schools perhaps play a bigger role.

Chart 1.2: Number of students per teacher in selected countries (2000)



Source: OECD 2002

2. Results can be Improved

There are many positive sides to the Norwegian educational system:

- The school is free of charge (tax financed) for the users.
- Despite the geographically scattered population, there is good access to schools in almost every locality.
- Norway is in the world elite when it comes to educational participation and duration. The level of education in the population is high.
- Norway has come very far in integrating students with special needs into ordinary school.
- When compared to other OECD-countries, the drop-out rate in upper secondary education is relatively low.
- Surveys show that most children and youth feel safe at school, and generally enjoy being at school.

In this chapter we shall, however, focus on the quality problems within the Norwegian school system. Especially the focus will be on student achievement because, first and foremost, this is something that we have to address.

2.1 Results from International Studies

We get an indication of the quality of the Norwegian school system by comparing ourselves with other countries. Several comparative studies measuring student achievement have been undertaken. The studies have mainly focused on reading, mathematics and natural sciences, reflecting the importance attached to these subjects.

Most international studies focus on primary school and lower secondary school, while upper secondary education is studied less. Especially this goes for vocational training, which therefore falls outside the scope of the present review.

The studies are based on what the students ought to know, and not on what they have actually learnt in school. Therefore, weak results in one country may be a consequence of the fact that the goals of the school system there deviate from what is measured in the study. Consequently the studies not only measure the quality of the schools; the results are also influenced by the school system and the school policies of the country in question.

In 1990 to 1991 Norway participated in a reading study within the context of IEA (The International Association for the Evaluation of Educational Achievement). This study dealt with the reading abilities of 9- and 14-year olds. Among the 32 participating countries, Norway scored well above average for 9-year olds, but only on average for 14-year olds (no. 17). Especially taken into consideration that many poor countries like Cyprus, Indonesia and Venezuela were among the 32 countries, and the fact that our neighbouring countries, Sweden and Finland, scored on the absolute top, this result was not particularly impressive (Elley 1992).

In 1995 the IEA carried out the TIMSS-study of mathematics and science (Third International Mathematics and Science Study). It showed that Norwegian students in, what is now 4th and 8th grade, were about average in natural sciences and below average in mathematics. Especially the results in mathematics in 4th grade were disappointing. However, students in the final year of upper secondary education scored high on scientific literacy (Lie et al. 1998).

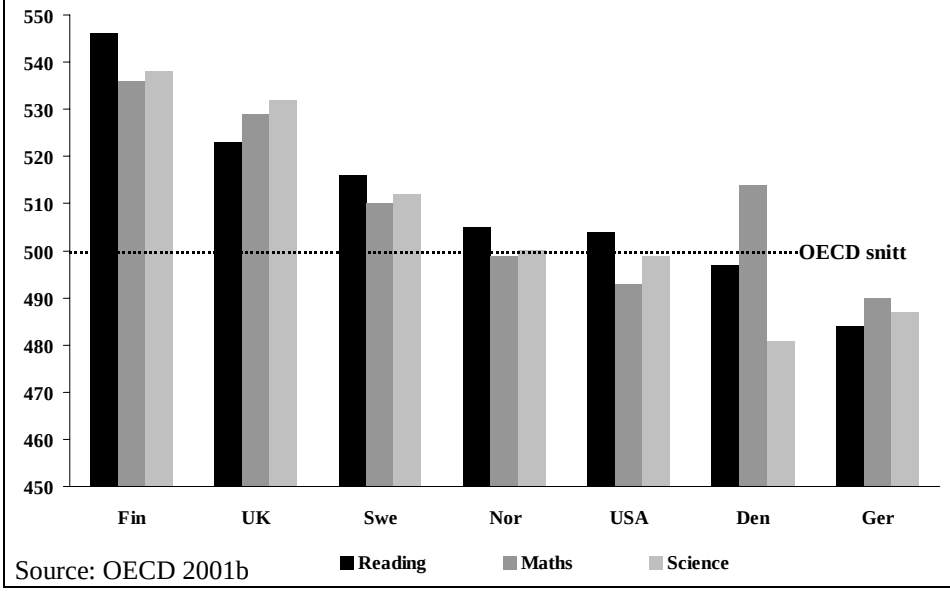
The PISA Study (Programme for International Student Assessment) was carried out in year 2000 by the (OECD 2001b, Lie et al. 2001). This constitutes the most comprehensive

international study undertaken so far, and it measures what is known as functional competence in reading, natural sciences and mathematics among 15-year olds within the OECD and a few other participant countries. In addition to measuring results within subjects, it provides information on attitudes, motivation and strategies for learning. The study is also sophisticated in other ways, because, among other things, it attempts to survey the competence of the students independent of the national curricula of the different countries, and also because the schools have been selected from a larger share of the annual cohort than ever before. This means that different results cannot be explained by students from special schools, or students with special needs having been kept out of the study to varying degrees.

The study has received great attention from most countries that took part, and it has set the agenda for the debate on educational policies in many countries.

Chart 2.1 shows the Norwegian results in comparison to selected countries. Among the 31 participants, Norway is no. 17 in mathematics, and no. 13 in natural sciences and reading. If we disregard less wealthy countries like Mexico, Brazil, Greece, Portugal, Russia, Poland and Hungary, which all score below Norway, the impression is that the results of Norwegian students are, at best, mediocre when compared to countries that it appears most natural to compare ourselves with. Moreover, the difference between Norwegian and Finnish students amounts to almost one grade (OECD 2001b).

Chart 2.1: Mean score in reading, mathematics and science for students 15 years of age in selected countries (PISA)

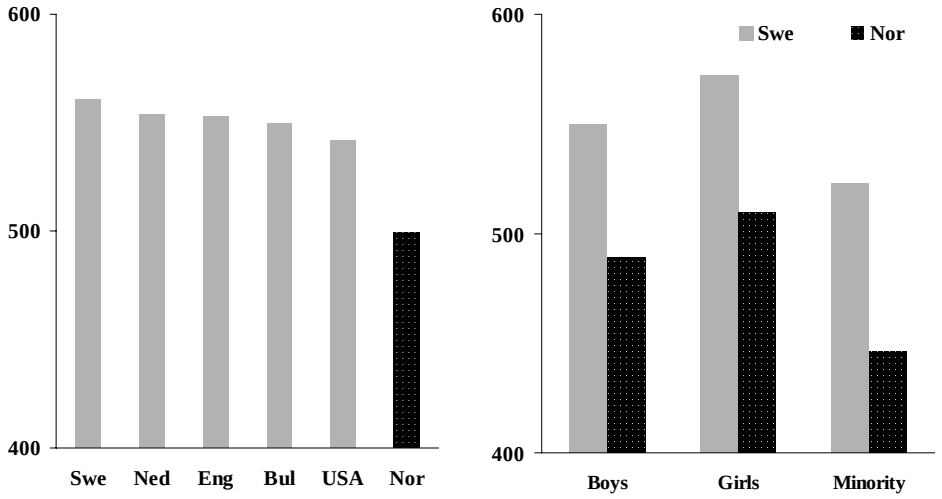


Source: OECD 2001b

The most recent comparative study, PIRLS (The Progress in International Reading Literacy Study), shows that reading skills among Norwegian fourth-graders are way below what we find in the countries that we prefer to compare ourselves with. Norway ranks as number 24 out of a total of 35 countries, while Sweden achieved the highest score (Finland and Denmark did not participate). What is especially sensational, is the fact that Swedish students with immigrant background read better than Norwegian students without immigrant background (to the right in Chart 2.2). Part of Sweden's high score in this study is probably caused by the fact that the Swedish fourth-graders were, on average, half a year older than the Norwegian

participants. However, the results also show that Swedish third-graders score higher than Norwegian fourth-graders (Sweden studied a sample of third-graders too).

Chart 2.2: Reading skills among students 10 years of age in selected countries. Mean score (left). For Sweden and Norway by gender and minority background (right). PIRLS.



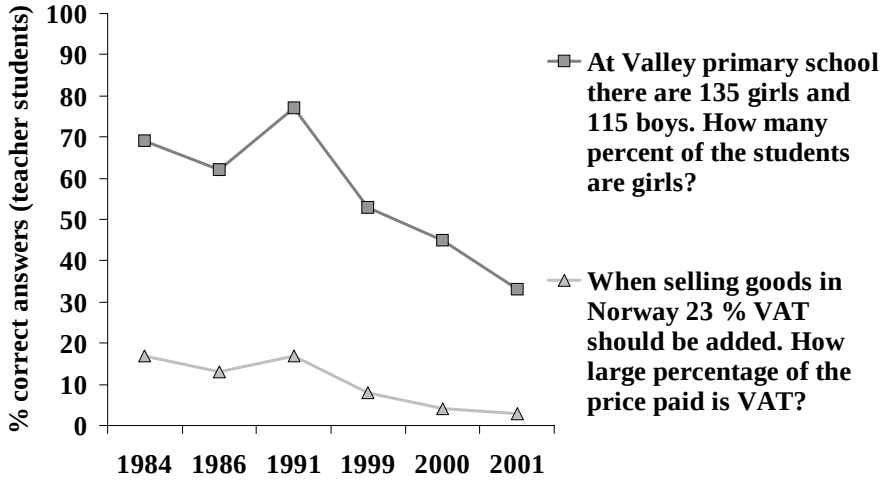
Source: IEA 2003. "Minority" is defined in PIRLS as students with both parents born outside country

Results from national diagnostic tests of reading, developed by the Centre for Reading Research at Stavanger College, indicate a weakening of reading abilities in primary school from the test was initiated in 1994 and through to 2001. However, the results from 2002 may indicate that the negative trend is about to turn. Researchers behind the study claim that the public attention paid to the level of abilities of students in primary school during recent years may have had a favourable influence (Engen et al. 2001, Solheim et al. 2002, Engen et al. 2003).

Norwegian adults are on the world top concerning reading abilities. The fact that Norwegian children do badly has been attempted explained away with the fact that adults are good readers. That is, the abilities supposedly will develop as today's children grow into becoming adults. An alternative interpretation of the results is that Norway was ahead with a well developed educational system. Practically every Norwegian adult has gone to school. Therefore they are on a higher average level than adults in countries, where the school system was developed later, and where many adults have incomplete schooling. We do not have this advantage any longer.

The regular studies of basic skills in mathematics on students entering higher education institutions carried out by the Norwegian Council for Mathematics (Norsk Matematikkråd) demonstrate a considerable deficiency in basic knowledge about mathematics. The results have declined continuously since the studies commenced in 1982 (Rasch-Halvorsen and Johnsbråten 2002). The test is to be solved with skills corresponding to the syllabus in lower secondary school. Nevertheless, on average, the students only have correct answers to about half of the questions. In 2001 even the best group, students in business and engineering, only answered correctly to 70 per cent of the questions. Teacher students have the weakest result with an average of 30 per cent correct answers (Chart 2.3).

Chart 2.3: Development during the period 1984 - 2001 in correct answer on two exercises. Percent of new teacher students.



Source: Norwegian Council for Mathematics

2.2 Learning Outcomes and other Goals in the National Curriculum

The National Curriculum establishes that the school is not only supposed to provide the students with a knowledge and skills that enables them to function well in social and working life. Education is also supposed to contribute to the development of fully integrated human beings. Children and youth are to be taught how to realise their inherent opportunities, but also to show empathy, care and solidarity towards others.

Often surveys of school quality are criticised for being too narrowly directed towards the basic skills of students. The reason, however, that it is first and foremost the basic skills in these subjects that are studied, is the importance of these skills. For instance, students who do not read relatively fluently, when they leave primary school, may get problems in many subjects as teaching in higher forms is increasingly based on the use of written material. Consequently, failing reading abilities are not only a problem in themselves, they also give the students in question additional strain by making other subjects difficult for them. This may lead students into a negative spiral, where low self-esteem and bad motivation follow from an experienced discrepancy between own efforts and achieved results.

It is worth noting that international studies in question do not operate with a narrow definition of student achievement. The Norwegian PISA-report establishes that Norway's statement of aims in the general part of the National Curriculum is in good accordance with what is measured in PISA (Lie et al. 2001). All the same, it is evident that not all the aims of the National Curriculum are captured by studies of this kind.

Implied in the criticism against using learning outcomes in the basic subjects as a measure of the quality of the school system is that there appears to be a notion about a negative trade-off between basic skills and other aims like well-being, social skills, attitudes and engagement.

To the degree that the remaining measures may at all be measured, international studies give reason for rejecting such claims. In 1999, in the context of IEA (called the CIVED- or CIVIC-study) an international study of students' "democratic preparedness and will to enagement" was carried out in ninth grade and second grade in upper secondary education. Norwegian

students score well above average on knowledge about democracy and attitudes, but below average on personal engagement (Mikkelsen et al. 2001, Mikkelsen et al. 2002). However, if we compare the different countries' score for knowledge about democracy and skills among students in ninth grade with the PISA-results on basic subjects, we do not find anything that indicates any relationship between skills in basic subjects and democratic knowledge and attitudes – neither positively nor negatively.

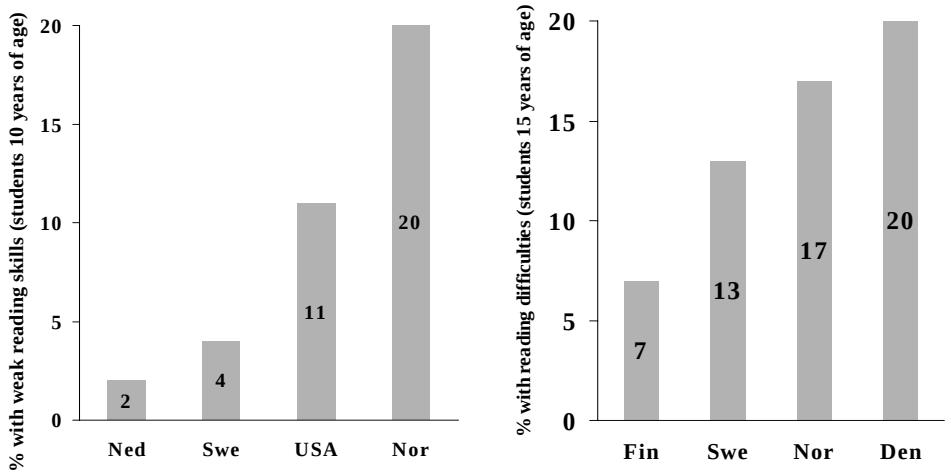
Neither does anything indicate that a school which provides better achievement in basic subjects, constitute an old-fashioned school disliked by students. On the contrary it seems as if schools where students show extraordinary progress in proficiency are characterised by a good climate both socially and pedagogically, and by a student-centered method of work (Grosin 2002). Consequently it is possible to reach both proficiency in subjects and social goals. It is not the case however, that the students learn a lot if only they enjoy being at school. For instance, the PISA-results show that Norwegian students like being at school, even though the results are average and the students are reportedly unmotivated. The PIRLS Study confirms that Norwegian students feel secure in school, and that less harassment occurs here than in many other countries, and that Norwegian Head Teachers are generally very satisfied with the learning environment. Nevertheless, the students' reading abilities are relatively weak. We shall return to this in Chapter 4.

2.3 High Inequality Between Students

The fact that Norway score average in international studies is not an expression of all Norwegian students possessing average skills. The averages conceal the great variations that we find among Norwegian students. Contrary to what appears to be a widespread view, the differences are greater in Norway than in most countries that we like to compare ourselves with. Research is not unequivocal as to where the differences occur: PISA shows that there is small difference between schools, but great differences within the schools. PIRLS shows great differences within classes. Contrary to PIRLS, Imsen (2003) finds that the difference between schools is great. There is, however, agreement that the inequality in achievement between students is high.

In addition to great differences, we have too many students that do not acquire the most basic skills, especially in reading (Chart 2.4). The PIRLS Study finds that 20 per cent of the Norwegian 10-year olds have not acquired elemetary reading abilities (IEA 2003). The PISA Study shows that 6.3 per cent of Norwegian 15-year olds score so badly that they are placed in the weakest category in the study, and that they have great problems working themselves through texts at all. An additional 11.2 per cent belong to the second weakest category, and they only manage the simplest of exercises. OECD (2001b) writes that those who are placed in these two lowest categories have reading problems of an order that may hamper them in their further education. In comparison, among the Finnish students 1.7 per cent and 5.2 per cent respectively are in the two weakest categories. Thus, in total it is about one fifth of the Norwegian students that possesses reading abilities so weak that it may create problems for them within further education and work life.

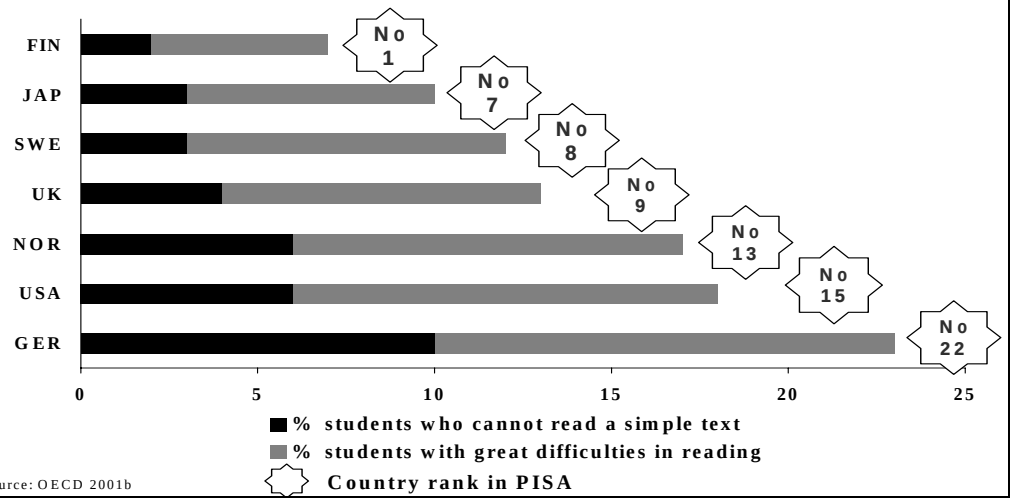
Chart 2.4: Weak reading skills. Percent of 10-year olds without basic reading skills (left), and percent of 15-year olds with great reading difficulties (right)



Source: IEA 2003 and OECD 2001b

The international studies show that there is no discrepancy between, on the one hand, obtaining good results and, on the other, to even out inequalities in school. Countries which have succeeded in achieving a generally high level of proficiency in subjects are characterised by a low level of inequality among the students. This is illustrated in Chart 2.5, where countries in the PISA Study with few students in the weakest categories of reading abilities generally appear with a high total ranking (the number inside the stars). Countries with many weak readers, among them Norway, USA and Germany, also have a low ranking in total. The PIRLS Study show a similar relationship between quality and equality. There is not such a great difference between countries concerning the share of very good readers. Thus, the difference in the average between countries is very much related to the differing success in lifting the weaker students.

Chart 2.5: Percent low-achieving students at 15 years of age (bars), and country rank in PISA (stars)



Source: OECD 2001b

2.4 Boys and Minority Language Students are at Risk

It is an international trend that girls are increasingly doing better when compared to boys. In Norway, according to PISA's study on reading, 23 per cent of the boys belong to the two lowest categories against only 10 per cent of the girls. According to the PIRLS study, there are 1.5 times as many boys in relation to girls within the group of students who have problems with reading. In the Norwegian diagnostic tests, we also find great gender differences in reading abilities. Considering the central role that reading abilities play, there is reason for concern about the boys' results in primary school. The results from PISA show that the girls did better than boys in natural sciences in 2000, whereas the opposite was the case in TIMSS from 1995. In the PISA Study, however, the boys kept a lead in mathematics. Results from compulsory school leaving exams in Norway in 2002 indicate that there are now no longer gender differences within the subject of mathematics; boys and girls have the same average marks in mathematics. Girls obtained better marks than the boys in all other subjects. The girls' relative success in school is a proof that the school is able to even out social differences, and that is positive. Nevertheless, it is negative, if the boys are increasingly doing worse.

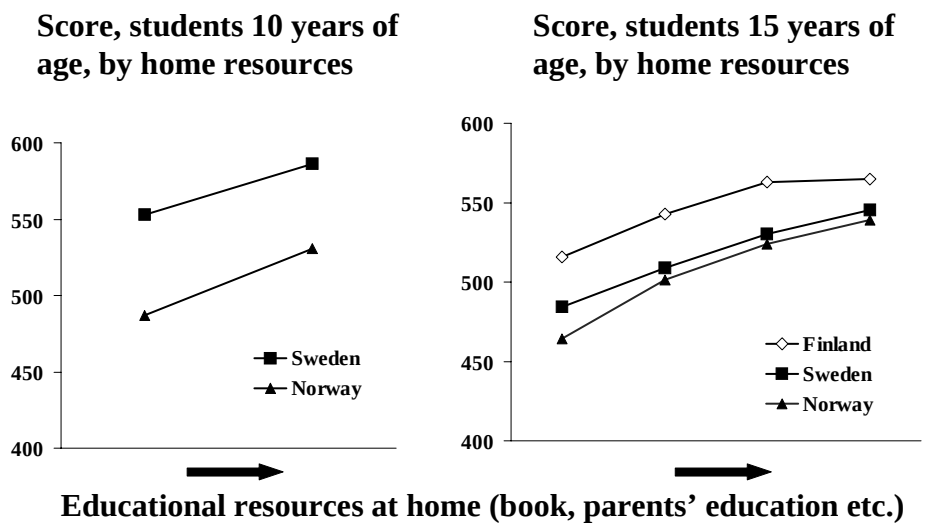
Both internationally and in Norway, minority language students on average score worse than students from majority background. In the PISA study the average for the group of minority language students was about the average of similar groups in OECD-countries, while in the PIRLS Study it is way below. The difference between minority language students, and the other Norwegian students, gives reason for concern. A recent research project which is included in the evaluation of Reform 97, documents how many students with weak knowledge of Norwegian obtain far worse results than other school children at two schools in Oslo (Øzerk 2003). The reason is that they often fall entirely outside the teaching in the classrooms. The project documents a disproportion between the proficiency in Norwegian language the students actually possess, and the proficiency taken for granted during teaching as it is carried out in the classroom. Furthermore, it is found that the teachers are only to a small extent concerned with success of minority language students in school subjects.

The situation of minority language students does not only constitute a language and educational problem. It is also a problem of social class which first and foremost originates in the generally low educational level of the parents. The statistics of marks for compulsory school students from 2002 show that minority language students have only a marginally lower average in marks than majority language students, when the educational level of the parents is taken into consideration.

The PISA Study also includes the relationship between the students' socio-economic background and achievement. The socio-economic status is divided into cultural, social and economic capital. The study confirms previous research which finds an evident relationship. It is strongest for cultural capital (see the right part of Chart 2.6) and somewhat weaker for economic capital (level of prosperity) and social capital which, among other things, measures how much contact the children have with their parents, and how much they discuss school with them. The Norwegian PISA-report establishes that the relationship between the socio-economic background of the students and their achievement is about the same in Norway as in the average of the OECD-countries. Thus, the Norwegian school system has not succeeded particularly well in compensating for the differences in the students' domestic background (Lie et al. 2001). The exception is constituted by economic capital, where the relationship is considerably less significant in Norway. This is put in connection with the fact that highly educated employees in Norway earn relative low salaries compared to what is found in many other countries.

The PIRLS Study confirms the picture that students from homes, where the parents are highly educated, where there are many books etc., obtain better results than fellow students (left part of Chart 2.6). Still, it is thought-provoking that Swedish students from under achieving groups – measured by domestic resources, linguistic background, help with home work – are better readers than the highest achieving Norwegian students.

Chart 2.6: Student reading score (PIRLS and PISA), by educational resources at home



Source: OECD 2001b and IEA 2003

An analysis of the marks of the students that left primary school in 2002 confirms that the Norwegian school system reproduces imbalances in social background. Students with parents who do not have an education above primary school level, obtained average marks of 3.2 in first-choice variant of Norwegian (general proficiency), whereas students with the highest educated parents obtained an average of 4.4 in a scale from 0 to 6. In the subject of mathematics the average marks of general proficiency for these two groups of students were 2.7 and 4.2 respectively (Norwegian Board of Education 2003).

The fact that social inequality is reproduced in school is not new knowledge. Since the 1950s research has documented that the student's background is of great importance to students' choice of education and achievement. Among prominent researchers within this field in Norway are Gudmund Hernes, Knud Knudsen, Marianne Nordli Hansen, Jon Lauglo and Per O. Aamodt (Hernes and Knudsen 1974 provides a review of early findings). Our knowledge, however, is faulty concerning whether the development is going in the right or the wrong direction; whether reproduction of inequality is stronger or weaker than before. The fact that education is probably more important than ever for succeeding in the labour market, indicates that it is more problematic than before that some students fail in school. The fact that we have two new trends concerning which students who, to an increasing degree, do not succeed – boys and minority language students – is also disquieting.

In his summary of the evaluation of Reform 97 Haug (2003b) writes : "Concerning some groups of students, the evaluation shows that the qualities are not good. Despite the aim, compulsory school does not provide an equal education for all students independent of sex, parents' economy, residence, abilities, and linguistic background. Several groups of students face a school which does not show sufficient consideration for their starting point and background." Haug especially emphasises the three groups we have mentioned here: boys,

minority language students and students with parents with low education. Thus, research and studies based on different approaches appear to arrive at the same result concerning priority areas for improvement within the Norwegian school system.

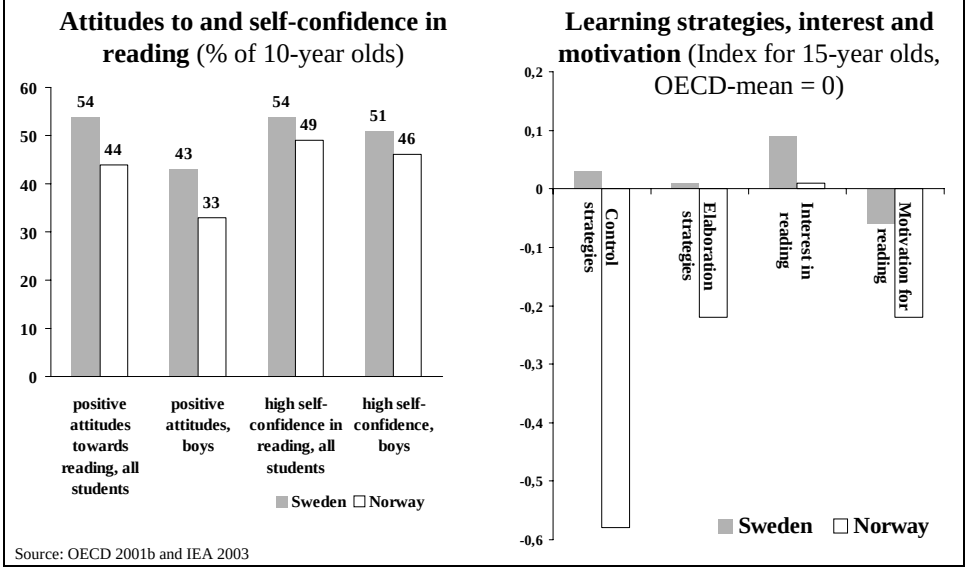
2.5 Weak Strategies for Learning

The students' attitudes to school work affect their motivation for learning, and they are decisive for the result. Subsequently it is decisive that the students have developed skills in the acquisition of knowledge; that they master various strategies for learning. This is more important than before, because we live in a society, where continuous updating of knowledge is necessary, and where much of the learning will have to be undertaken outside a formal teaching situation.

Therefore it is serious that the PISA Study show that Norwegian students have little interest in, and are badly motivated for school work. Norway also scores low on the indicators of strategies for learning. Of the 21 countries that were included in this part of the study, Norwegian students scored *very worst* on control strategies; that is, how the students control and try out what they have learnt. Also Norway is among the very worst in elaboration; that is, how the students manage to connect new knowledge to the one already existing (the right side of Chart 2.7 depicts these indexes for Norway and Sweden).

The PIRLS Study of the reading abilities show a less negative picture of the Norwegian students' attitudes and self-confidence concerning reading in Norway compared with other countries. However, also on this point we are still a bit behind Sweden (left side of Chart 2.7).

Chart 2.7: Student attitudes, motivation and learning strategies in Norway and Sweden (PIRLS and PISA)



Source: OECD 2001b and IEA 2003

2.6 The Learning Environment

According to the PISA Study, the learning environment in Norwegian schools, characterised by disturbances in class and undisciplined and unmotivated students, is among the worst in the OECD. On an index based on a number of questions that the students have answered about the conditions of discipline in class, Norway scores *worst of all* the OECD-countries, apart from Italy and Greece (OECD 2001b). Another index measuring other aspects of the

relationship between teacher and student provides similar results, but not quite so bad. Also here Norway scores worse than all neighbouring Nordic countries.

The Youth Study from 2002 finds that noise and unrest is a bigger problem in lower secondary school than in upper secondary education. An entire 55 per cent of the students in lower secondary school, against 29 per cent in upper secondary education, think that there is too much noise and unrest during lessons. A majority of the students (two out of three) think that teachers ought to be stricter with students who make noise (Rossow 2003). Imsen (2003) does not, however, find that Norwegian primary schools are characterised by unrest and "idling away".

An internet-based user survey of students (The Student Inspectors) was started in 2001. Half of the students in lower secondary school that participated in the survey say that they have got teachers that create interest in all or most subjects. In upper secondary education 41.5 per cent of the students experience that they have good teachers according to this criterion. The Youth Study from 2002 find a somewhat better result. Here two out of three students in lower secondary school and upper secondary education agree that the teachers are good at teaching, and three out of four think that they learn something important in school every day or several times a week.

The last available study about public services that Norwegian Gallup carried out in 2000 shows that 82 per cent of parents with children in primary school are overall satisfied with the school. In lower secondary school the corresponding share is down to 71 per cent, whereas it rises to 80 per cent in upper secondary education. Almost nine out of ten parents in primary school are satisfied with the class teacher's behaviour towards the child and the parents (Norsk Gallup 2001). Nordahl (2003) points out, however, that it varies greatly how successful the cooperation between home and school may be, and that it is often parents of students with proficiency problems and social problems, who experience that the cooperation with the school does not function.

The Gallup Study offers possibility for measuring the development of parents' satisfaction over time. This shows a declining tendency for primary and lower secondary school in total, from an index of 73 in 1992 to 66 in 2000. It seems as if satisfaction with school overall has sunk, but it may also be explained with an increase in expectations of the school.

Studies of students' and parents' satisfaction with the school generally show that they are least satisfied with the physical environment like buildings, indoor climate and equipment (Gallup 2001, Kommunenettverk for fornyelse og effektivisering 2003).

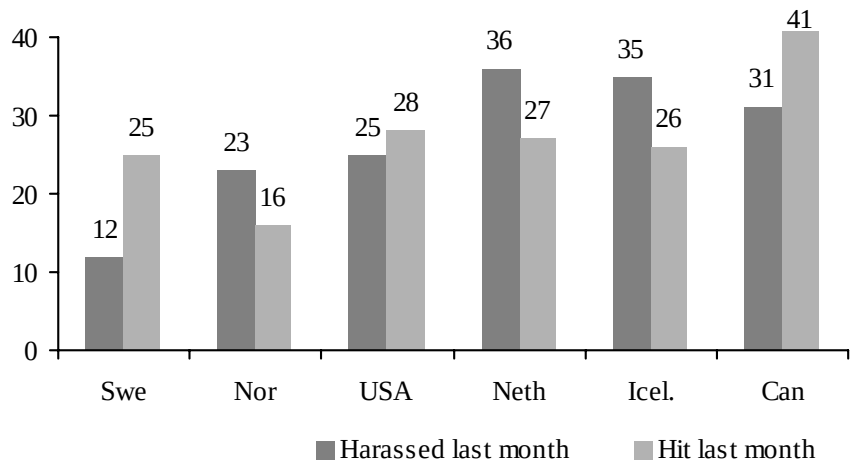
2.7 The Social Environment

Figures from the Olweus Programme show that 13 per cent of the students in primary school, about 75 000 children, report that they are harassed regularly (Olweus 2002). Harassment occurs most frequently in primary school, where 15 per cent of the students in fourth to seventh grade report that they are harassed by fellow students at least twice a month. The corresponding figure for students in lower secondary school is 8 per cent. The Youth Study from 2002 shows that a considerably smaller share of the students in upper secondary education are being harassed, than what is the case among students in lower secondary school (Rossow 2002).

The students who are harassed clearly suffer from a higher level of depression, anxiety and poor self-image. Thoughts about suicide are five times more usual within this group in comparison to students that are not harassed. The harassing students are characterised by considerably more aggressive behaviour like fighting and kicking, backbiting and rumour-

mongering and anti-social behaviour like vandalising, pilfering and more extensive use of alcohol and tobacco. The analyses also show that there are great variations with regard to cases of reported harassment. The level of reported harassment may be five times higher in one school than in another one within the same municipality. Norwegian Gallup has found that the smallest and the largest municipalities are worst at handling harassment.

Chart 2.8: Students being harassed or hit last month at school. Percent of 10-year olds in selected countries (PIRLS).



Source: IEA 2003

The PIRLS Study among 10-year olds has registered a larger extent of harassment than the Olweus Study. Presumably this is caused by differing definitions. As many as 23 per cent of the Norwegian 10-year olds answered that they had been harassed by fellow students during the last month, and 16 per cent answered that they had been hit or hurt during the last month (Chart 2.8). The extent of harassment is smaller in Norway than in most other countries that participate in PIRLS. Hence, we have succeeded relatively well with the social environment in Norwegian schools, even though great challenges are still attached to reducing the level of harassment.

The Students' Inspectors show that more than three fourths of the students in lower secondary school and in upper secondary education enjoy being at school (Dale and Wærness 2003). The Youth Study from 2002 find slightly higher levels of student satisfaction in upper secondary education compared to lower secondary school (87 per cent and 81 per cent respectively enjoy being at school) (Rossow 2003). Imsen (2003) also finds a generally high degree of well-being in Norwegian primary schools, but she finds that the social environment is worse in lower secondary school than in primary school.

According to the Olweus Programme, the difference is small between the amount of boys and girls that are being harassed, while far more boys than girls state that they frequently harass others. Imsen (2003) finds no differences between different groups concerning well-being in school. Based on the many studies of well-being and harassment that we have got, it is reasonable to conclude that we have a school system, where four out of five students more or less enjoy being at school, whereas one out five are not well taken care of by the social environment.

2.8 Possible Explanations for Weak Results

Norwegian educational policies have had ambitions about developing an educational system where everybody shall be enabled to make the most of their potential for learning. Therefore the mediocre results from the international and national studies of student achievement have been met with disappointment. However, the results have also brought about an interesting debate with engaged contributions from teachers, parents and researchers. By way of introduction, it may be worth to repeat that the explanation for weak results and great inequality within the Norwegian school system cannot be embedded in the economic or social conditions. Norwegian schools have a better resource situation than what is found in almost any other country, they have one of the world's most highly educated populations of parents, there are relatively small social differences among the students and relatively few minority language students. We are not able to offer a perfect explanation for what may be the reason for the quality problems within the Norwegian school system, as the knowledge about the theme is incomplete. Until recently, little has been done within Norwegian pedagogical research to study or explain student achievement. During the last year, however, a few researchers and teachers have launched some hypotheses which to varying degrees have been tested empirically.

Integration

Often it is claimed that it is only natural that the results in proficiency in subjects become weaker, and the inequalities greater in a system like ours, where almost all students are integrated into the ordinary school system. A Norwegian study shows that integration may provide a win-win situation, but that it also has its price. Integration may lead to a situation of loss, with lower quality for all, if the integration is not accompanied by adequate resources, or if the attempt is made to integrate students into classes which do not function well (Grøgaard 2002). Similarly, a comparative study in the context of OECD finds that integration is possible, but that it demands efforts; especially towards children with behaviour difficulties (OECD 1999). The evaluation of Reform 97 has also given indications that there is great will, but not sufficient ability, to provide adapted education for all students, and that so far the inclusive school has not quite found a form which ensures that the students fully utilise their potential for learning (Skogen et al. 2003, Haug 2003b. See also the section below about standardising).

It is important to point out that the international studies aim at comparability independent of the systems in the participating countries. For this reason special schools participate on a par with other schools, and there are clear common rules for which students may be excepted from the tests. Consequently it is not so that the studies measure a "skin effect" of integration. A possible integration effect will be very real, but there is a need for more research in order to establish whether this is a problem within the Norwegian school system, and what may possibly be done.

Anti-intellectualism and Pogressive Pedagogy

The researchers Anne Welle-Strand and Arild Tjeldvoll have a more radical approach to the problems within the Norwegian school system in the article *The Norwegian Unified School – a Paradise Lost?* (Welle-Strand and Tjeldvoll 2002). They claim that populist educational policies during the last half of the 20th century are the reason for the reduction in quality within the Norwegian school system. These policies are characterised by anti intellectual attitudes, where practical skills and local knowledge are regarded as more important than formal knowledge and basic skills. Learning in the form of play and practical work is looked

upon as more important than systematic and goal oriented construction of knowledge among the students. Furthermore there is a strong orientation towards not creating loosers, among other things, by not recognising differences, by not using competition as a means and by not drawing attention to the specially gifted students. In the authors' opinion, this has contributed to lowering the level of achievement.

Journalist and former teacher John Hustad is touching on a similar hypothesis in the book *The School that Disappeared* (*Skolen som forsvann*, Hustad 2002). According to Hustad the faulty learning outcomes are due to, what he calls, progressive-romantic pedagogy, where the children are made pitiable and are protected against demands and the setting of limits. He critisises the authorities for having done a disservice to the students by having substituted the school of general public education with a school of upbringing and care.

Much of the argumentation here, we recognise from debates that have been running especially in the USA and England since the 1980s (cf. Solstad 1997). The reports, *A Nation at Risk* from 1983 and *Better Schools* from 1985 were published in the USA and England respectively. The American document establishes that the educational basis of society is eroded by an increasing wave of mediocrity. The English document blamed progressive pedagogy for the insufficiency of the educational system, because it provided the students with too much freedom of choice. Progressive pedagogy was also critisised for stressing social relations at the cost of factual knowledge, and for neglecting the transfer of basic values and national culture. A last main objection was the lack of specific aims. This debate reached Norway in the 1990s and contributed to the detailed demands to contents that we find in the curricula from Reform 94 of upper secondary education and Reform 97 of compulsory education.

Values and Norms

Within sociological research, differences in students' educational choices and achievements are often attached to different norms and values within different social strata (Grøgaard 1997 outlines these theories). Children and youth from homes where education is not particularly valued, or who belong to communities or networks where achievements in school does not provide social status, will invest less efforts in schooling. If this is to explain Norway's relatively weak position concerning the achievement of students, it must imply that norms and values "hostile to education" are more widespread in Norway than in our neighbouring countries. This does not appear reasonable, considering the high educational level that we have. Neither does the Youth Study from 2002 indicate that the students do not appreciate education. The majority of students (nine out of ten) in both lower secondary school and upper secondary education partly or totally agree that "schooling is good to have, no matter what I am going to do later", and that it is important to obtain good marks (95 per cent) (Rossow 2003).

Standardisation and Lack of Individual Adaptation

In his summary of the evaluation of Reform 97, Professor Peder Haug mentions that the school's aversion against diversity and difference in treatment may paradoxically lead to inequality. "The school appears to be best for those who are normal and average, and for those who belong to the groups which have a tradition for functioning well in this school. The interpretation is that we have a school which is not very sensitive to variation, heterogeneiety, diversity, deviance, what is colourful, what is different and unknown. The school appears to be at its strongest and best for those who fit into the pattern which the school has created over the years. The school has created a standard for what is demanded in order to benefit from

being there. Those who are unable to face it as it is get trouble. Many of those will fail in obtaining proficiency in subjects taught. By adapting the conditions in a better way for those students who at present appear to be least included in the activities of the school, the total result of the school will also be raised. (...) The condition may be put in connection with a clear prioritisation carried out in educational policies through large parts of the last century. It emphasises strong central control, rather strict standardisation and harmonisation of the schools, and with great emphasis on the collective aspects of working methods and contents. (...) Once these policies constituted an important means for building the nation, and for being able to educate as many as possible in a country facing enormous challenges, with little resources and few differences among people. In those days, this was the way to create social justice and welfare. Today society is different, the formulations in the National Curriculum put great emphasis on individual adaptation and follow-up. Social justice today is about the creation of space for variation and about adapting the school to the individual." (Haug 2003b)

In practice, attempts at individual adaptation within the Norwegian school system has mainly been oriented towards the weakest students by admitting the right to special education for students whose achievement from ordinary teaching is not satisfactory. When the international studies show that we, nevertheless, have more underachieving students in Norway than in many other countries, this may indicate that special education has not worked according to intentions. Research shows that special education does not meet particularly well with students who have achievement problems, but to a large extent it is used for relieving the teacher and the other students, in cases when a student has behavioural problems. Hence remedial teaching is given to students, who in many cases do not have achievement problems, but have a behavioural problem. This may be some of the reason why research also finds that there are many students, who do not benefit from remedial teaching, and even some who are affected negatively (for instance cf. Haug et al. 1999, Nordahl and Overland 1998, Langfeldt 2003). One reservation has to be taken concerning this research, and that is that ususally it cannot say anything about what these students would have achieved without remedial teaching.

Haug (2002) points out that it might be constructive to redirect the attention away from the "defect" of the students and towards how the school may be better adapted to the individual student: "Many of the realities in school are still characterised by a view that says that when a student does not learn, there is something wrong with the student. That it may have got something to do with the way a school is organised by the municipality, the way the school is run, or how the teachers work in the school actually does not concern many yet. All "guilt" is put on the individual student and the student's parents. Rather, the question ought to be: what is wrong with the school that this child attends, when it does not learn what is expected? The question that is often raised instead is: what is wrong with this child, since it does not learn what is expected?"

Bureaucratisation

Also teacher Jon Severud criticises the policies of standardisation, but from a slightly different angle than that of Haug. In the book *The Malaise in School* (*Ubehaget i skolen)* he takes an especially hard line against what he claims is excessive regulation and control and bureaucratisation of the school, where the teacher is de-professionalised and reduced to an obedient official. According to the author, the exaggerated use of written material – circulars, project applications, evaluations, assessments etc. – diverts the teachers' focus away from the students (Severud 2003).

Lacking Skills for New Working Methods

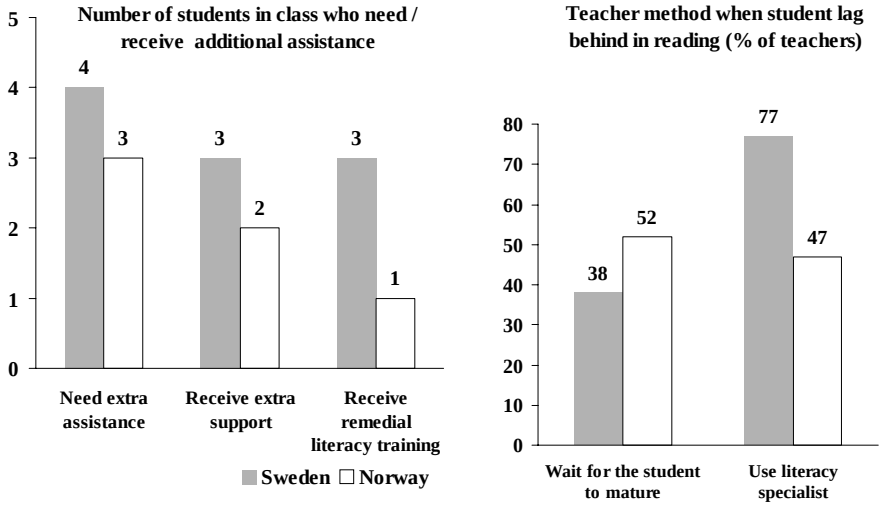
Many researchers, among others Grøterud and Nilsen (Grøterud and Nilsen 1997), have pointed out that the teachers possess too little knowledge about what promotes good learning. The evaluation of reform 97 confirms this. New working methods like project work and theme based teaching lead to very activity oriented teaching which is, however, only to a small extent goal-oriented and systematic. Especially the lower primary level, but also the other levels, are marked by many and frequent switches between themes and activities, and by the fact that it is often unclear what is the purpose of the different activities. Through classroom studies the researchers uncovered unclear demands to proficiency in subjects, absence of summing up, unsystematic use of various learning activities and a lack of corrective feed-back to the students (Klette et al. 2003). Øzerk (2003) finds that minority language students have had their situation in the Norwegian school system worsened after the new working methods were introduced with Reform 97, because these presuppose better knowledge of Norwegian language than more traditional teaching methods do.

The PIRLS Study offers an illustration of the unclear demands and lack of systematic approach to literacy education. According to the Norwegian researchers on the project, the teaching is to a remarkably small degree directed at giving the students good reading strategies (for instance by answering questions about, or writing and commenting about, what they have read). The PIRLS results confirm that the classes that obtain good results work more systematically with reading and reading strategies. In classes with a high average there are clearly more activity concerning summing up (oral and written), work with answering questions and conversation with fellow students after the students have read. In these classes also more students enjoy reading.

The PIRLS researchers point out that it is a disquietening number of teachers who state that if a student lags behind in reading, they wait to see if the achievements improve after more maturation (Chart 2.9). In Swedish schools there are far more students who are considered in need of, and who receive, remedial teaching in reading. Whereas in Norway an additional teacher without special expertise is often used, Swedish students with reading problems more often get taught by a reading specialist. This may indicate that the level of ambition in Norway is somewhat low, and that systematic measures are not taken, when the problems are uncovered. The researchers conclude that, concerning the literacy education, there is a great potential for development within the Norwegian school system.

The evaluation of Reform 97 also point to a great potential for improvement of the reading and writing education already from first grade. Great variations are found among teachers and classes concerning literacy education. Teachers who emphasise reading and writing education already during first grade, appear to be working more systematically than other teachers. The researcher claims that this may have big consequences for the student, and especially for students who, for various reasons, struggle to acquire competence in written language, and who need a good start with systematic influence (Hagtvedt in Klette et al. 2003).

Chart 2.9: Literacy education for weak students 10 years of age in Norway and Sweden. Assessed need and provision of extra resources (left), and teachers' methods (right).



Source: IEA 2003

According to the National Curriculum, the students are supposed to have "responsibility for their own learning", but it may appear as if the students to a too small degree are made able to take this responsibilty, and that it is the weak students who are made to suffer. Solstad and Rønning (2003) find that especially for students who struggle a bit, the lack of structure and directing in connection with new working methods may be difficult to handle. Furthermore Lyng (2003) finds that teachers in lower secondary school often "abdicate" from directing the students in project work, and that in practice the students have resposibility also for their own involvment in the school work. A lack of effort in project work is often accompanied by teacher comments like: "they must be willing themselves – they must be willing to work, otherwise we can't do anything", "we can try to motivate them, but if they don't want to, then they don't want to". Fellow students explain the "idling around" of the others as if they do not manage or bother to take responsibility for themselves. Lyng warns that views like these may lead to an understanding of the students' lack of involvment as something that one just has to live with – because some of them just cannot or do not want to take responsibility for their own learning.

Heen (2003) finds that the teachers more often think that the student is able to take responsibility for own learning, compared to what the parents think. The interpretation of this finding is that parents intervene if they observe that the student does not manage to take the responsibility for his or her own learning. To the teachers, it may therefore look as if the students are able to handle a work plan with little structure better than they actually are. The parents experience that they themselves end up with the responsibility, instead of the student. The interaction and communication around the work plan becomes an example of how work and responsibility may be shoved between school, parents and student. Ericsson and Larsen (2000) point out that the school has given the parents considerable responsibility for the children's learning, and they think that this is a problem because different groups of parents have very different backgrounds for carrying out the tasks they have been allotted. This may constitute an element of the creation of inequality within the Norwegian school system.

Rønning (2002) uncovers a need for competence-building both among teachers and students in order for new forms of work, like theme based teaching and project work, to become more successful.

Anarchy of Goals and Unrealistic Level of Ambition

Severud offers a good illustration of how teachers are overwhelmed by the societal problems that they are supposed to solve – everything from drug- and alcohol-abuse, deficit of parental care and sexual abuse to consumer awareness (Severud 2003:48). When the goals become so many that it gets impossible to reach them all, it will, in the last resort, be each particular school and the individual teacher that prioritise what actually is going to be taught. Thus, faulty basic skills of Norwegian students may be a result of the fact that this area has not been ahead in the competition for what is to be prioritised. Imsen (2003) finds that the teachers think that the National Curriculum for compulsory school is too extensive. Haug (2003b) indicates what negative consequences this may imply: "Generally the teachers assess the National Curriculum positively. It is being read, much used, and it makes up an important tool in the planning. They want a plan with relatively detailed contents and which shows the progression of subjects. (...) At the same time, the teachers critisise the curriculum rather strongly, they see discepancies, blurred concepts and vague signals. The most central criticism is its high level of ambition, and the large size the subjects have been given. This level of ambition appears to be way above what one may expect can be done in a school for everybody. Demands may paralyse the school staff, and have reduced the local scope for action. When the curriculum becomes too extensive something will have to be chosen away. A consequence of this then is that the teachers themselves must decide, and with that, the plan looses the controlling function it should have had. The alternative is to go through the material at rather high speed, something which many students will not benefit from. It may seem reasonable, therefore, to point to the curriculum as a plan for those students who are able, and who feel comfortable with an encyclopedic or lexical ideal about education and learning. Several of the researchers have also pointed to the fact that this curriculum, with so much and strong central control, makes it difficult to carry out adapted education".

Weak Ability for Self-Correction

According to Haug, it has been known for a long time that for some groups, the school does not function satisfactory, but this knowledge has not lead to the introduction of measures for changing the conditions. Consequently a lot indicates that the schools lack an ability for self-correction. This systems failure can probably be traced back to national educational policies: "Policies have not been very concerned with supervision, follow-up and control of the working methods that the school have employed, and the results that the school has achieved. Therefore they have not had particular good conditions for insight and change" (Haug 2003b). This may indicate that an external element should be introduced in order to obtain a positive developmental spiral in the school. Such external elements may consist of openness, external evaluation and follow-up.

3. Money is Necessary, but not Enough

To a high degree, the debate on education in Norway is centred around the issue of financial resources invested in the sector. Above we have seen that the Norwegian school system has high and stable resources, but that it creates average results. However, the fact that the relationship between resources and results is weak is not a distinctively Norwegian problem. A lot of research effort has been invested in examining this relationship.

3.1 International Research about Resources and Results

Research on the relationship between investment of resources and achievement *within one particular country*, has been carried out, first and foremost, in the USA. There is also an extensive debate on research methodology. Through a number of meta-analyses (abstracts from a large number of primary analyses) of American data, Eric Hanushek believes to have demonstrated that the relationship is so weak that it is hardly measurable (e.g. Hanushek 1986, 1996, 1997 and 2002b). A literature study published by the Swedish school authorities (Gustafsson and Myrberg 2002, Gustafsson 2003) puts great emphasis on his critics, like Robert Greenwald and Alan B. Krueger (Greenwald et al. 1996a, 1996b, Krueger 2000, Krueger and Lindahl 2002). These believe to find a bigger, but rarely very big, effect. A comprehensive analysis of the TIMSS Study from 1995, which we shall return to in Chapter 4, shows a positive, however weak relationship between expenditure and results. The same goes for the PISA Study (Schleicher 2003).

In Sweden several studies of this theme have been carried out. They do not provide unequivocal results. Some studies find a certain effect of resource spending on the learning outcomes of the students (Skolverket 1999). Others do not find any such relationship (Sandström 2002, Ericsson et al. 2001). A Danish study does not find any relationship between student achievement and the municipalities' level of expenditure in Denmark (Nannestad 2003).

A study that deals with the development *over time* within OECD countries arrives at the result that a considerable increase in resource spending in the span of years between 1970 and 1994 has not provided better results (Gundelach et al. 2001). Both internationally and in Norway, the centre of gravity of the academic milieu appears to demonstrate that there is no considerable relationship between investment of resources and student achievement. (Wössmann 2001, Birkemo 2002).

3.2 Norwegian Research on Resources and Results

Also in Norway we have got clear indications of a weak relationship between resources and results. Norwegian researchers in pedagogy and economics co-operated in the research project *From Resource to Result* (*Fra ressurs til resultat)* to analyse the relation between resources and achievement in Norwegian lower secondary school from 1997 to 2002. The achievement was measured as the students' progression in language and mathematics through 9th and 10th grade.

The researchers conclude that only one per cent or less of the differences in achievement can be explained by differences in resources for teaching. This both goes for the level and development of student achievement (Birkemo 2002). Differences in level may both reflect the school's contribution, and the students' background and former schooling, whereas the development over time more precisely measures the school's impact on achievement. The conclusion is that the great variations in resource investments in the Norwegian school system

to an insignificant degree is reflected in the school's ability to provide the students with learning. This conclusion is in accordance with an older study of student achievement in upper secondary education (Bonesrønning and Rattsø 1994).

A significant share of the schools' resources are allocated as strengthening measures for extra teaching resources and special education on a permanent or temporary basis. The effects of measures like these in the 10th grade were studied. The conclusion is that there is only a modest relationship between extra resources and progress in proficiency in subjects. The effect appears to vary between the measures, and in some cases it is positive, while in others it is negative (Birkemo 2002).

3.3 Research on the Effect of Types of Input

Class Size and Student – Teacher Ratio

The level of expenditure for education clearly correlates with the size of classes and the number of students per teacher. For this reason, a central part of the resource debate has dealt with the importance of class size and number of students per teacher for the quality of the teaching. Also in this debate, Hanushek and his critics are central (Hanushek 1999, 2002a and 2002b, Krueger and Lindahl 2002, Krueger 2002). For a large part, the disagreement is methodological; among other things about what studies to emphasise.

A possible explanation for not finding a strong relationship between size of classes and results *within* countries is that low-performing students may be placed in small classes. This does not explain differences *between* countries. Most international comparisons suggest that smaller sizes of classes generally has little or no effect on the results. Wössmann's analysis of TIMSS actually finds that the results were clearly *better* in countries with big classes, than in those with small classes, and that there is no effect of the number of students per teacher on the results. Hanushek's and Luque's analysis of the TIMSS data (2001) provides similar results as those of Wössmann for the 13-year olds, but they find a weak positive effect of smaller classes for the 9-year olds. Another TIMSS analysis shows that in most countries, the students in big classes are doing best. Norway is one of the countries where the impact is small however (Martin et al. 2000).

Hans Bonesrønning's study of the Norwegian school system confirms international findings (Bonesrønning 2002a). Also in this case, smaller classes in general only give a small improvement of the results, but it is noticeable for certain groups. In the summary of the research from the project *From Resource to Result* Birkemo (2002) concludes that there does not appear to be any effect of small classes on achievement in Norwegian, but a very weak positive effect in mathematics, and on the level of marks in general. So the effect is small, even though the differences in sizes of classes are very large, namely from 9 to 30 students in the sample.

An experiment from Tennessee initiated in 1985 is central to the research debate on size of class (the STAR Project). The project comprised 11600 students in almost 80 schools on pre-school level and the three first grades in primary school. The students were placed randomly in normal or small classes (about eight students less per class) up to 4th grade, when all were placed in normal classes. A considerable positive effect of small classes could be measured at the end of pre-school in both reading and mathematics (Gustafsson and Myrberg 2002, Krueger 2002), but the effect can only be identified in half of the schools that participated (Hanushek 2002a). The differences that occur during the first year are carried on to later grades, but are not strengthened. A number of methodological objections that question the result have been raised against the project. Hanushek concludes that the experiment does not

support the claim that small classes in general give better results, but that it may give a positive effect, when the students are to be socialised into a classroom situation.

A reasonable summary of the literature is that class size generally shows a weak relationship with achievement, but that students with special, and the youngest students, may benefit from smaller classes (cf. also summary of the research in Gustafsson 2003). To make any substantial difference however, it will be a matter of large reductions in existing class sizes. Taking into consideration the high costs connected with such a measure, this does not appear as a realistic way to raise the quality of education, if teaching is not, at the same time, organised in a more effective way. In Norway today, we have about 20 students per class, but only half as many per teacher. Hence there is a potential for reducing the group size considerably by thinking alternative ways of organising. Many schools already have carried out such changes within the existing level of resources.

The Size of Schools

International studies show that on average small schools perform worse than big schools. In the PISA Study the positive effect is strong up to about a 1000 students, and after that it levels out (OECD 2001b). These results are not adjusted for the background of students, however. Norway has many small schools compared to OECD countries. There are many good reasons for us to keep on having many small schools in Norway, but we cannot expect this to contribute to a better achievement.

Birkemo (2002) finds that the achievements in Norway are clearly better in cities than in the countryside. This is also true, even though the share of minority language students are concentrated in the city, and even though the expenditure per student are considerably larger in small municipalities in the countryside. Among other things, the reason for this is that considerably more extra resources are spent for extra teaching resources and special education lessons, the smaller the municipality is. Naturally, the size of the classes also declines gradually in accordance with the number of students in the municipality. The research team speculates, whether the better results in the cities may be due to better conditions for promoting learning among the students in the cities, and they do not conclude unambiguously that the differences in results are due to differences in quality between the schools.

Quality of Buildings

Naturally enough, the physical environment in school is of importance to the well-being of both staff and the students. Professor Birgit Cold at NTNU has recently finished a research project, which shows that students associate friendly, bright, open and varied rooms with feeling welcome, with pride, love of work and social company (Cold 2003). She has not studied, whether the students actually learn more in a good school building. Labour research shows that there is a relationship between well-being and results. One should think, therefore, that this would also be the case in school. However, a summary of international research for the Swedish Skolverket does not give reason for drawing any conclusions about a relationship between school building quality and student achievement (Gustaffson and Myrberg 2002). Neither does the PISA Study find any relationship between results and “physical infrastructure” (OECD 2001b). One of the main conclusions from Cold’s project is that “the aestehetic design and quality of the school layout is read and remembered as an expression of the norms and values of the culture and the priorities of society”. The fact that the school buildings reflect the school’s importance as a social institution is a point in itself. It is, therefore, both correct and necessary to upgrade Norwegian school buildings, but we should not expect that this would contribute significantly to raising the results in school.

IT-equipment

In recent years computers and Internet link-up have become usual in Norwegian schools, and further upgrading in this area will happen. Norway is in a good position when compared internationally. Both in Norway and internationally it is too early to say anything for certain about the effect of new technology on achievement. A study of literature for the Swedish Skolverket sums up that available international research indicates that the dissemination of computers in school does not, in general, have any positive effect. The results are dependent on whether the teacher possesses the necessary competence to utilise this tool (Gustafsson and Myrberg 2002). The PISA Study shows no relationship between the dissemination of computers in the classrooms and achievement (OECD 2001b). Other summaries of the research are more positive (Rochelle et al. 2000). It appears to be the way the resources are utilized which is decisive for the result. Computers and broadband are of little use, if user support does not work, or if this is not a part of a good pedagogical scheme.

The comprehensive evaluation, ImpaCT2 of the ICT-effort at 60 schools in England, finds that the students who use ICT a lot score somewhat better on the national tests than do other students, in more than one third of the tests. In none of the tests, the comparison went in favour of students who make little use of ICT. The relationship between use of ICT, and the student's achievements, varied between the subjects in the different grades (Harrison et al. 2003).

4. How to Create a Good School?

A good school is a school, where all students get their potential for learning realized independent of social background and physical and mental equipment. A good school is also supposed to provide the students with social competence and democratic values, and a good school is a school where students are safe and satisfied. The review in chapter 2 shows that the Norwegian school system has a job to do in order to realise this important goal. Research shows that the students' social and linguistic background, sex and family conditions have a good deal to say for their achievement (Birkemo 2002), and of course also physiological conditions like maturity, abilities, sleep, nutrition and stress (Gordon 1997, Karni et al. 1994, Imsen 2003). Many of these conditions, the school has little or no possibilities to exert its influence on. Still, however, educational research quite clearly shows that the school and the teachers are of great importance to the students learning. There is all reason for the school to harbour higher ambitions for itself, than just to reproduce the differences that already exist in society. The school may influence the students attitudes and motivations for learning, and this has a lot to say for the achievement (Birkemo 2002, Imsen 2003, Brophy 1983, Delpit 1988). The school may also influence the students' learning directly through the quality of the teaching that is offered, and through systematic follow-up of the individual student. A review of the factors that research has indicated have an effect on the student's learning is given below.

4.1 The Teachers

Educational research confirms the impression that very many parents and students have – the individual teacher plays a big role. On the basis of a broad study of literature, Gustafsson (2003) concludes that of all resource factors in school, teacher competence is the factor that influences student achievement the most. The largest study of teacher quality was undertaken in Texas, over three years, in the middle of the 1990s, and comprise more than half a million students in four grades, at more than 3000 public schools (Rivkin et al. 2002). It shows that even though socio-economic background is of very great importance to achievement, the importance of having a good teacher over many years in primary school is even greater. The researchers illustrated the differences as follows: a good teacher can give students one and a half year's progression within a school year, whereas a bad teacher only helps them half a year ahead. This study confirms the results from a study of teacher quality in Tennessee. This state constitutes a particularly suitable object of study, as data exist that follow teachers and their students' achievement over time (Saunders and Horn 1998).

Plenty of research has been done on what characteristics of the teacher further the student's learning. Some of those characteristics may be trained through initial training of teachers and continuing education and training measures, and not least through the continuous development of competence that ought to take place in any workplace in the knowledge society.

Even if there is broad agreement about the importance of the teacher, a good deal of the research that has been looking for "the good teacher", has been completely in vain. It has been difficult to identify specific characteristics with effect in all types of learning situations. For instance, the Norwegian project From Resource to Result studies a large number of variables that measure various aspects of teacher competence and teacher behaviour, but finds only one single variable that has a systematic impact on the student's achievement, namely whether the teacher sets high standards (Bonesrønning 2002c, 2003, Birkemo 2002). Another catch is that a good deal of the research comes from the USA, and a slight reservation has to made about

the transferability of the findings, in so far as they, to some extent, will depend on the organisation of the American labour market and the educational system. Furthermore, a good deal of the research has been carried out in primary and lower secondary school, and for this reason it says little about the effect of the teacher's competence on higher levels. With these reservations in mind, what follows is a review of what we know about "the good teacher."

Recruitment to the Teaching Profession

Many countries in Europe struggle with a lack of teachers (Eurydice 2002b). Norway is in the lucky position that for the time being, we have plenty of teachers. Nevertheless it may be claimed that we have a hidden lack of teachers, defined the way that teachers teach subjects that they are not fully qualified for. For instance, according to Statistics Norway, half the teachers that teach mathematics and science and environment in primary school did not have any credits in the subjects in 2000. Due to larger cohorts of students and high average age of teachers, we run the risk that in a few years time, we may lack teachers, with professional depth studies, to teach in upper secondary education.

In order to recruit the good teachers, the school must become an attractive workplace. Important factors that ensure good recruitment for the teaching profession are salary and career possibilities, the status of the teaching profession, working conditions both concerning working hours and teaching load, like the number of students in the class and the composition of students, security, quality of buildings, possibilities for professional development, the quality and reputation of teacher training and also access to jobs for newly qualified (Santiago 2001, cf. also section 4.4 about salary).

The Norwegian school system scores relatively high on several of the variables concerning working conditions. However, the teaching profession has been relatively badly paid for a long period of time, and this may be the reason why the number of applicants to teachers training have been few. Almost all formally qualified applicants have been admitted to teacher training institutions in Norway. In comparison it may be mentioned that in Finland, the teaching profession has high status, and teacher training, together with medicine and law, has the highest admission requirements among higher education courses. In recent years, the teachers in Norway have been given a substantial increase of salary, which hopefully will improve recruitment to the profession.

The Formal Competence and Experience of the Teacher

One of the questions that has been thoroughly elucidated by research is whether it is academic competence or pedagogical competence that is most important in teacher training. Several studies have lent support to the importance of the teacher's level of knowledge both in the form of professional knowledge and general knowledge as a basis for successful teaching, and especially for teaching in higher grades (Goldhaber and Brewer 1997, Rowan et al. 1997, Wayne and Youngs 2001, Ferguson and Ladd 1996). The analysis of the PISA results show a positive, if small, effect in schools where a larger number of teachers are university educated in the subjects they teach (OECD 2001b). The amount of pedagogical education appears to be just as important. This indicates that subject expertise is a necessary, but not sufficient, condition for good teaching. Some studies point out that the teacher's subject expertise is important up to a certain level, but that specialisation beyond this level does not improve the results of the students. Beyond this threshold level it is far more efficient to develop the teacher's pedagogical skills and knowledge about development and learning, curriculum work and subject specific teaching methods (cf. for instance Darling-Hammond 1997, 1999, 2000, Monk 1994, Ferguson and Womack 1993). Several international studies however, find only a

weak influence of the teacher's formal educational level on the achievement of the students (Rivkin et al. 2002, Schachter 2001, Goldhaber 2002, Hanushek and Luque 2001, Wössmann 2000).

Competence-building for the teachers – which happens both in the form of traditional upgrading courses and as continuous development processes in the schools – may have great effects on the students achievements. In an experiment in Israeli schools, researchers compared costs and returns from three different models for improvement of the students results: reduced size of classes, longer schooldays and continuing education of teachers. They concluded that continuing education is the most cost effective method for improving the achievements of the students (Angrist and Lavy 1998).

Also a Norwegian study which is included in the evaluation of Reform 97, points to competence-development for teachers as the most important requirement in order to reach the goal about adapted teaching for the students (Strømstad et al. 2003). The study points out that the school faces an especially great challenge in the case of inclusion. According to the researchers, the realisation of the target of Reform 97 about both academic, social and cultural inclusion requires a continuous upgrading of the teacher's skills, and continuous development work in the school. Local development work, where the focus is on developing greater flexibility in school is also the best strategy for upgrading of skills, the authors claim. The project has not, however, examined whether upgrading of skills has an effect on the student's learning outcomes.

The Norwegian Board of Education (2003) expresses concern that a very small part of the nationally allocated resources for development of 187 million NOK goes to formally competence promoting measures for teachers, and that there is still too much emphasis on short courses with apparently little effect.

The teacher's experience first and foremost has an impact on student achievement in the beginning of the teachers professional career (cf. for instance Hanushek et al. 1998, Murnane and Philips 1981, Klitgaard and Hall 1974). This probably is connected to the so-called "practice shock" and indicates that it is possible to improve student achievement, provided that the teacher training becomes more professionally oriented. Professional orientation of teacher training has been a goal for a number of teacher training reforms. Despite this, the teacher training still puts too little emphasis on giving the students insights into empirical examples and theory which accounts for and analyses the school and the reality the students will meet as teachers. Instead ideals and harmony, especially in the form of psychological theory, are emphasised (Haug 2003).

Another means that may reduce the "practice shock" is a closer follow-up of newly qualified teachers in the transition phase between studies and professional life. Still more European countries introduces such transition measures which imply both a support and a control function. In some countries, the education is not finished, before the student has worked as a teacher for a period, and students who do not function in practice are not qualified for employment as teachers. Other forms of measures imply that teachers in their first job are compulsory supervision and various courses (Eurydice 2002c).

The Teacher's Personal Qualities, Attitudes and Ambitions

Good education and formal competence is a necessary, but not sufficient, requirement for becoming a good teacher. Educational research indicates that the difference between a good and a bad teacher is not only embedded in what kind of education, and how long experience the teacher has. It is also a matter of personal qualities and motivation.

As mentioned by way of introduction, a Norwegian research project shows that it contributes in a positive way, when the teacher sets high professional standards (Bonesrønning 2002c). The PISA Study found a weaker relationship between results and strict demands by the teacher, both in Norway and the OECD as a whole (Lie et al. 2001, OECD 2001b). The PISA Study, however, shows that the teachers' motivation and engagement, as the Head Teacher assesses it, is of importance.

American research finds that the teachers' intentions, goals and expectations are of importance to student achievement (Brophy and Good 1986). Solvang (1999) refers to an experiment which finds that the teachers expectations of the students have clear consequences for how much the students actually learn. After an intelligence test, teachers were told that they had been given students who were more gifted than the average. The fact was that this was a randomly selected sample of students, but these students developed far better in school than the other students. The students, who were socially defined as intelligent, did well through the support and the expectations that the teachers had of them. New findings from USA show that some teachers systematically underestimate the achievements of overweight girls. Researchers fear that teachers in this way lower the students' ambitions – that they will to "live down" to the expectations (TES 2003). The evaluation of Reform 97 confirms that it occurs that teachers lower the expectations of the students based on impressions of their social background. Especially minority language students are vulnerable to such categorisations. Øzerk finds that the teachers wanted the best for these students, but nevertheless they signalled in one way or another that not all minority students have the possibility to succeed in school (Øzerk 2003).

4.2 The Teaching

Research on teaching efficiency has identified certain factors of importance to student achievement: the most important is the "curriculum taught", that is, not what is written in the National Curriculum – "the intended curriculum" – but what is actually communicated in the classroom (Gamoran et al. 1997). Other factors are clear classroom leadership with an emphasis on few, but clear rules and procedures and also well incorporated routines, maximum use of time on the activities; very active participation of the students: clarity and structure in the activities: exercises prepared for the level of each individual student based on diagnostic survey, and also evaluation of the student's progression and adequate follow-up of this. The great bulk of research that has searched for the "ideal teaching method" has however, been without result. Hence it is realistic to assume that there is no ideal method (Baumert et al. 2001).

To a high degree this is confirmed by Norwegian research. The project *From Resource to Result* found no relationship between methods and student achievement (Birkemo 2002). Neither is any effect found of so-called progressive pedagogy on the students' learning outcomes – neither in positive nor in negative direction . The flow ("drive") in the teaching, however, appears to be of importance (Imsen 2003).

The TIMSS analysis shows a great effect of the fact that the teacher uses time for the evaluation of the students (Wössmann 2000). The PISA analysis shows that both discipline and a good relationship between teacher and student generally is important for the achievement (Lie et al. 2001). On the contrary, Birkemo (2002) finds no clear relationship between discipline and student achievement and development of skills.

A lot indicates that the composition of classes or groups is important. Able students contribute as a resource in the classroom both in the form of engagement during lessons and through direct help to fellow students, and they contribute to motivating their fellow students

by influencing the value orientation in the classroom. This is documented by much research, also in Norway (cf. Coleman et al. 1982, Bonesrøning 2002d, Grøgaard 2002). Segregation in the sense of students being recruited from homogeneous housing areas into schools and classrooms, will prevent this peer group effect from functioning optimally. For this reason, the effect of integrating students with special needs will vary in relation to the composition of the rest of the class.

4.3 The Schools

School Administration

The teacher is the most important for improving the results of the student. The less visible and present the other levels are (the school administration, the local education authority, the state), the more important the teacher will be. A good school leadership and administration may, however, be of great importance to school quality. Professor Lennart Grosin at the University of Stockholm has produced a review of research that identifies characteristics of schools where students have extraordinary progression in achievements. Head Teachers and teachers at such schools look upon teaching and learning as the primary purpose of the school, and they have great expectations of the student's progress in achieving skills independent of their social background. Schools like that also have clear social rules which are enforced consistently, and they reward positive behaviour. All these factors indicate that a good school leadership is important in order to obtain good results in school.

International research points to the importance of pedagogical leadership at the school in the sense that the head teacher supports the primary processes of learning and teaching (Hallinger and Murphy 1986). A survey of Norwegian head teachers showed that administrative tasks hamper the possibility for carrying out pedagogical leadership, and also it showed that a number of head teachers do not see it as their task, or do not feel welcome, to observe teaching in the classrooms. About a third of Norwegian head teachers claim that they do not use much time on following up the teaching offered to the students (Møller and Paulsen 2001).

Research has also shown that a supportive school climate, an orientation towards professional goals, follow-up and evaluation on school level, and also consensus and cooperation among the staff employed at the school further the students' learning (cf. for instance Creemers 1994, Scheerens and Bosker 1997). On the other hand no positive effect of the teachers' trade union power on student achievement is found (Wössmann 2000, Hoxby 1996). This may be interpreted as if cooperation and trade union work have neither the same goal nor the same content.

Parental Involvement

The student's domestic background – especially the parents' education and socalled cultural capital – has a lot to say for the school achievements of the student in Norway (Birkemo 2002). In Chapter 2 we saw that some researchers find that too much of the responsibility for the student's learning has been left to the home. This indicates that collaboration between home and school which consists of moving the learning home from school creates inequality in a negative sense, in that students from homes with few resources miss out on learning.

Nordahl (2003) claims that the importance of social background for student achievement perhaps may be reduced helped by better collaboration between school and parents. Especially on the background of the fact that parents who are not satisfied with the collaboration often are those who have children with problems at school. A form of collaboration between the

school and the parents that functions well, may have positive effects on the students learning by the fact that home and school agree about the needs of the student. Then home and school will pull in the same direction and thus obtain bigger influence on the student. Furthermore, the school may possibly help parents in supporting children's learning.

The evaluation of Reform 97, however, confirms previous research in the field which shows that the parental collaboration within the Norwegian school system is marked by unclear goals and random organisation. About 80 per cent of the parents say that they seldom discuss conditions concerning the teaching with the teachers, 85 per cent express that they only to a small degree have any influence on what is going on in connection with the teaching, and many have little knowledge about what it means to be a parent in the school (Nordahl 2003). The researcher concludes that there is a need to clarify what the collaboration is supposed to be about, and how it is to be done, and also to improve the parents competence and the attitudes of the school within this field. Furthermore, what it implies of duties and rights to be a parent in Norwegian school ought to be communicated clearer both on national and local level,

Autonomy for Schools

During recent years, some research projects that look at the importance for the students' learning whether decisions about various conditions are made centrally by national authorities, locally by the local education authority, or at the particular school and by the individual teacher, have been carried out.

Wössmann's very thorough analysis of the TIMSS data shows that delegation of power to the school level constitute one of the most important factors that affect student achievement (Wössmann 2000). It is a clear finding that when the central authorities establish the curricula and are responsible for the central exams and assessment, then student achievement increases. It also does so, when the rest of the decisions on the running of the school are left to the school itself. Findings from the PISA-study points in the same direction, and the report refers to the fact that many of the countries that did well in the study, during recent years have changed focus from input, in the form of resources and the contents of the school, to results. They have established clear goals for all parties involved and make a systematic assesment of whether the goals have been reached. This gives the schools more freedom to organise the teaching and the subjects they offer, and freedom to prioritise within their own resource framework (OECD 2001b, Schleicher 2003).

The PISA Study shows that also countries with a decentralised decision-making structure do not have bigger quality variations between the schools. Consequently it is not the case that more freedom creates many "looser schools". Finland and Sweden are among the countries that have the least variation in quality between the schools, but at the same time a relatively high degree of decentralisation.

Wössmann finds a big positive impact of the fact that the school has got freedom to hire teachers and to set their wages, whereas an analysis of the PISA data do not find any strong relationship here. The effect of freedom of action for the teachers also is not unambiguous. Wössmann finds a clear positive effect of the fact that the individual teacher may influence the contents of the teaching (and also has control over the purchase of equipment for the teaching). Also the PISA analysis has studied the importance of teacher's freedom of action, but it is not able to demonstrate any significant effect.

International comparisons of the school's autonomy show that we in Norway are in the middle, when it is a matter of delegating decisions to the schools (Eurydice 2002, OECD

2001b). In Norway a good deal of authority is delegated to the municipalities which again may delegate further down. We do, however, still have a fair amount of rules that many other countries have skipped (for instance rules about maximum size of classes, which was recently decided abandoned). Sweden, The Netherlands and New Zealand are countries which have delegated very much authority all the way down to school level.

Delegation of tasks involves a danger of bureaucratisation of the schools, and that focus is moved away from what is going on in the classroom and towards new planning processes etc. Successful delegating requires that the schools are able to handle new tasks. It is therefore a danger signal, when three out of four Norwegian head teachers claim that increased autonomy for the schools implies so much administration that it will be at the cost of pedagogical tasks (Møller and Paulsen 2001), and also that we see that many municipalities are reducing their educational competence without seeing to that the schools themselves actually are have the necessary competence to be in charge of their own development. Finstad and Kvåle (2003) point out the importance of work with school development on the municipal level. They find that this varies a good deal, and that organising the work in networks or the municipal education department seems to be important. They also find that many teachers think that the municipalities are failing their responsibility for quality development.

A good example of successful local development work is a literacy project in 13 schools in six small municipalities, initiated by a regional support service in Nord-Østerdal in 1998. Before the project was started, about 20 per cent of the third graders in the region were below the critical limit for reading ability, a figure close to the national average. The purpose of the project was to bring down the number of children with reading and writing problems. In 2001/02 the number had gone down to 14 per cent in the project municipalities, whereas it had increased to 23 per cent on a national basis. The project takes the teacher as its point of departure. When the teacher is well schooled, the teaching may be adapted to the individual student. The teachers are continuously guided in the classroom, and an emphasis is put on implementing measures as soon as possible, and not wait for the student’s maturation (Utdanning 2003).

Experiments with the Working Hour Agreement

In order to avoid that Norwegian school becomes too rigid, we have a tradition for extensive experimental and developmental activities concerning both pedagogy and organisation. Today 343 approved **local experiments** which deviate from regulations in the Education Act are carried out. Most of them are about softening up rules about class organisation and deviance from rules about distribution of subjects and lessons. The state educational offices have evaluated 32 schools which launched experiments in the school year 2001/2002. There were not negative feed-back from any of these schools. At the same time about 600 experiments deviating from the regulations in the Working Hour Agreement have been approved. A number of experiments constitute combined experiments according to both the Education Act and the Working Hour Agreement. The big interest in such and other experiments is encouraging. It shows a great will for change and improvement in the school. At the same time it is a clear sign that today's rules to a too high degree limits the space for action.

The Working Hour Agreement between the teachers' unions and the State (to be transferred to the municipalities by 4th of May 2004) regulates in detail how teachers are to manage their time. Stereotyped, the agreement is constructed around one school day where the teaching goes on in one class, in one classroom, by one teacher and in one subject. Todays curriculum, however, prepares for project and team work, and gives the student an extensive responsibility for own learning. The students work in projects which may include several subjects at the same time. They may work individually or in groups, and decide themselves how long they want to go on, before they take a break. The teaching load constitutes 58.5 per cent of the man-labour-year in primary school and on average 52.5 per cent in lower secondary school. In upper secondary education it varies from 36.9 per cent to 52.9 per cent between subjects. The rest of the time is the teacher's untied time for preliminary and touching-up work, planning and continuing education and a 150 hour frame for so-called organised tasks. The head teachers' right to control in reality is limited to these 150 hours. Through re-negotiations, the schools have got larger space for action which makes possible planning for a good learning environment for the students. There has been opened for more flexibility concerning teaching, as there is now an annual frame for teaching load, not the weekly timetable planning, which is the guideline for the number of hours the teachers are supposed to work. It varies a lot, how the schools utilise this scope for action.

In February 2000 a special agreement was made into about temporary **experiments/deviance from central working hour agreements** within the school system, so-called locally initiated experiments. The experiments were carried out from 2001 to 2002 at 342 primary and lower secondary schools and 26 upper secondary schools, and was evaluated after one year (Bungum et al. 2002). A precondition for the experiments have been that the schools were not to loose resources as a consequence of the experiments, even if they have organised and distributed the work in a more effective way.

The evaluation of experiments with alternative working hour arrangements indicates that a more extensive local freedom of action, also in this area, may have a positive effect for the schools. The evaluation showed that 73 per cent of the municipalities thought that the experiments contributed to a better use of the resources in school, and 75 per cent of the teachers thought that the collaboration between the teachers and the contact betwen student and teacher became better through the experiment. First of all the teachers mentioned increased working motivation, increased space for action for pedagogical work, and increased influence on ones own working situation. The teachers also pointed out a number of areas, where the teaching had changed in a positive direction for the students. This concerned the follow-up of individual students, engagement among the students, adapted teaching and contact among the students. The results first and foremost appear as a result of more extensive common presence for the teachers. The schools have had a will for changes, have used time for collaboration among the teachers and have developed the school and the teaching. The Evaluation report points out that the school is dependent on motivated teachers in order to carry through changes, and that the condition that the resources were not to be reduced as a consequence of the experiments, was very important for the result being successful. Several of the experimental schools have made teacher teams the supporting unit in the organisation of the teaching. A well functioning team, aid and support for administration and time planning, sufficient teacher resources and suitable rooms for teaching and collaboration have proven to be important in order to be able to handle the challenges of a new organisation of work, and reap the rewards of the work for students and teachers.

4.4 Incentives and Salaries

In most countries teacher's salaries are fixed in central or local (municipal) negotiations based on formal criteria, and not according to individual assessment or from results or user satisfaction. In a few countries, like Sweden, many municipalities have delegated this all the way down to school level. Some countries have also experimented with bonus arrangements on individual and group level based on results. Research on the result of local wage formation and bonus arrangements is not very comprehensive. Wössmann's analysis of TIMSS shows a clear relationship between good results and fixing of salary rates on each particular school, whereas the PISA Study does not find any such relationship (OECD 2001b).

It is necessary to separate the effect of salaries which are directly about incentives for efforts (result based salary) and the effect via recruitment to and retirement from the teaching profession. Result based salaries for teachers are made difficult by the fact that the results are difficult to observe. Salaries based on somewhat narrow measures of results, like the students' marks or test scores, may have negative consequences, like, for instance, it may make the teaching too focused on preparing the students for the tests, or outright cheating with the results.

Research on result based salaries is very scarce, simply because salaries of that kind are rare. The few and limited American studies that exist, point towards a positive effect on the results (Burgess et al. 2001, Dee and Keys 2001). In 1996 in Israel, an experiment was carried out, where 62 schools competed about a pot to be divided among the teachers and teacher oriented initiatives. Only the best third got bonus. At first it was a matter of collective rewarding of the school, but parts of the pot was divided among the teachers according to results, and the rest went for an improvement of the teachers' working environment. The schools that participated showed a slight improvement in the results (Lavy 2001). According to Imsen (2003) the teachers in Norwegian schools say that they are only to a small extent motivated by external factors, and to a larger extent by care for the children, professional interest and creativity.

A Norwegian study confirms international research that shows that salaries are of importance to recruitment to and retirement from the teaching profession. The higher the salary one can gain as a teacher, the bigger the recruitment to the profession. The other way around, the higher the salary a teacher can gain in an alternative job, the greater is the probability that the teacher will leave the profession. The probability for change of job within the teaching sector is at least as wage sensitive, as it is outside the teaching sector. The effect is equal for women and men, but higher for younger teachers than for older. The results support a hypothesis that higher salary will result in redused retirement and increased recruitment to the teaching profession (Schøne 1999). It is therefore reasonable that the schools –similarly to other enterprises – can use salary as one of the means for recruitment or in order to keep attractive staff.

In the debate about the effect of various incentive arrangements, it is important to be aware that the current lack of incentives on all levels may have negative consequences. Examples of this are – put somewhat harshly – state initiated "crisis packages" that punish municipalities which take responsibility on their own (for instance the loan scheme for school buildings would in practice give the largest subsidies to municipalities which have let their school buildings deteriorate); the financing of special education which rewards schools that gets as many students as possible a diagnosis; wage agreements that reward other activities than staying with the students in the classroom; and also a lack of connection between the efforts the individual teacher, the school and the municipality invest, and the reward they get.

4.5 Choice and Competition

During recent years much attention has been paid in some countries to greater freedom of choice for parents and students, as a means for furthering better quality in school. Even though there is a high degree of agreement that freedom of choice for users in general furthers efficiency and user orientation, it may be the case that the school is different. Choice reforms imply that the public sector keeps most of the responsibility for financing. With this also follows a comprehensive public control over how the funds are being used. In other ways too, the state will put strong leads on the contents in school. Thus it is not a matter of basic education becoming a market in the traditional sense, rather it is a matter of expanding the freedom of choice and possibly make use of economic reward systems within clear public frameworks. In the case of Norway, the geographically scattered population will also be a barrier to create real freedom of choice.

Empirical research in this area mainly deals with two things: The effect of increased freedom of choice on student achievement in both independent, private and public schools, and also whether freedom of choice leads to increased social segregation. Fowler (2003) identifies three points of complaint against this research:

1. Research is often ideological: most of those who publish research about freedom of choice within the educational sector are fanatical supporters (freedom of choice solves all problems) or opponents (freedom of choice leads to social catastrophe) on an ideological foundation.
2. The findings are often not robust: researchers of different ideology arrive at the different result based on the same data. Hence the research is not credible.
3. The research is of limited relevance: a lot of research is done on the effect of choice on social segregation and student achievement, but less on the effect on school development.

This underlines the importance of looking at the entire breadth of research results and not on singular findings. There is quite a lot of research that points towards freedom of choice contributing to increased achievement through competition between schools (Hoxby 2003, Bergström and Sandström 2001, 2002a). Skolverket (2003) also finds that freedom of choice has been an important driving force behind local school development in municipal schools in Sweden. Ladd (2002) claims that it is not possible to show that freedom of choice improves the efficiency in the school system.

According to Skolverket, concerning the question on whether freedom of choice strengthens or counteracts existing social segregation (which primarily occurs via the housing market), research is not conclusive. They find results that pull in different directions, and they let Goldhaber (2000) conclude that so far we know too little to be able to draw conclusions with certainty. Skolverket finds that parents in Sweden believes that freedom of choice will result in increased segregation, but that the municipalities have different experiences. Hoxby (2003) concludes that one cannot find general effects of freedom of choice on segregation, but that the effect is completely dependent on how freedom of choice is worked out (for instance, if the schools are allowed to select students according to level of achievement). In a Norwegian study Helgesen (2003) finds that parents choice of school, among other things, is motivated by a wish that the children ought to move in heterogeneous school environments. Parents see it as a strength that children learn to associate with different people. In many areas the local school offers few possibilities for this. Therefore, abandoning area based recruitment may contribute to an increased mixing of the students – and to less segregation.

4.6 Systems for Quality Assessment and Quality Development

Information, Openness and Accountability

Still we know too little about the quality within the Norwegian school system both concerning achievement in subjects and attainment of the school's other goals. Especially we know little about the development of results within the Norwegian school system over time, and to what extent different municipalities or schools succeed better than others. Even though every particular educational institution, through the Education Act, is obliged responsibility to assess its activity, and the local education authority must see to that the assessments are carried through, only 60 per cent of the municipalities carry out systematic quality assessments of their schools (Norwegian Board of Education 2003). Lack of knowledge about quality is a very big problem for the local education authority and the schools in question. Finally it is a problem for students and parents, who do not know the level of the student's achievements, and therefore do not have the best basis for getting engaged in processes that may make the school better, or choose another school, if possible.

Norway is one of the few countries in Western Europe that lack a national system for quality assessment in compulsory education apart from final exams. For a long time it has been an expressed political wish to develop national systems for measuring the quality within the Norwegian school system. The work started with an OECD report from 1988 about the situation within the Norwegian school system. Both Report to the Storting no. 33 (1991-92, no. 47 (1995-96) and no. 28 (1998-99) voiced the idea of developing national evaluation systems. Despite good intentions and support for national quality evaluation only fragments of a system like that is in place.

After a recommendation from the Quality Committee in 2002, the Ministry has started the development of a national quality assessment and quality development system, wherein which an important element is openness about the schools quality in a wide sense. The core of the system is constituted by national tests of the students' basic skills, motivation and learning strategies, and also the assessment of learning environment by students, parents and staff.

There is an international trend in educational policies regarding opening of the schools for more transparency for the authorities, the parents and the public. The core of the new national assessment systems often consists of standardised tests in central subjects, and the fact that the results from every school are made public. By making the school's results visible one wishes to mobilise for responsibility to a higher degree on all levels – both internally in the school and by the help of external pressure. This is now done in a number of countries, among others Sweden, Denmark, Iceland, Norway, England, Scotland, France and in the different states of the USA. Some countries or local authorities also publish a broader set of indicators which, for instance, includes well-being and working environment (for example the municipality of Gothenburg in Sweden and a few states in the USA). Some national systems also publish more sophisticated "value added" indicators aimed at measuring the school's contribution to the student's learning. This may be done by measuring the students' progress instead of their level, and/or by adjusting the indicators for the composition of students at the school (Sweden, England, France). In some countries systems like these are also attached to economic bonuses for schools that achieve well, and/or automatic follow-up of schools with weak results (England, USA).

Experiences from other countries indicate that the publication of results in itself may release measures at schools that do badly. Research within the field is not very extensive, but it may indicate that publication of results has a certain positive effect on achievement, and that the effect is somewhat bigger if incentives are attached to the publication. This research also

shows that if incentives are attached to the test, it becomes even more important to score well, and this increases the danger of unintended side-effects (Hanushek and Raymond 2002).

An often mentioned side-effect is that the teacher narrows down the teaching in order for the students to score as well as possible on the tests (teach-to-the-test). Whether this constitutes a problem depends to a high degree on how the test is worked out. Pure syllabus tests may contribute to unfortunate side-effects, whereas it would be difficult to prepare the students in this way for tests which aim at testing competence in breadth (like PISA and PIRLS). No matter what, the important thing is that one is trying to survey competence, knowledge and skills which it is essential that the students master. If this implies that the teachers direct the teaching more towards the skills which are studied in the tests, it may be positive.

Florida has a system that has been studied a lot. Several studies have confirmed that the bad schools have in fact been improved (Gill et al. 2001). Ladd (2002) claims that the improvements are not due to the threat of loosing students – which is an element of the system – but solely because of the publication of the school's results and follow-up of these.

Visscher et al. (2000) points out that the response to the publication of results depends on what indicators are used, and also by the other policy elements. If there is free choice of schools, it would be more rational for the schools to try to recruit "better" students, as this is the easiest way to raise results. This may be counteracted by direct prohibition against such recruitment of students, or by publishing indicators that measure the students' progression instead of their average level.

Development Work

There is not much point in measuring results, if it does not lead to assessment, and there is not much point about assessment if it does not mobilise for action. A great challenge lies in making a connection between measuring, assessment and development on the school level. Despite the fact that this is a method with long traditions in school – teachers hand out tests in order to find out where the students stand, and in order to offer individually adapted help – there is little tradition for attaching developing measures to assessment and situational description on school level. The school based assessment is to a small extent directed towards assessing the contribution of the school to students' learning. Even though the external examiners at national exams, year after year, see the same problems in the answers of student cohorts from one and the same school and even teacher, this information very rarely comes back to the schools. Situational reports show that only every third local education authority (municipalities and counties) uses the examination results to any extent in connection with assessment and follow-up (Norwegian Board of Education 2003). Thus, the work that is invested in assessment within the Norwegian school system has very scant effect of improvement.

Examples on how the national survey material is used in some schools and municipalities is indicative of the fact that there is a positive development going on in this field. With infrequent intervals the media report about reading projects initiated by the municipalities or schools themselves on the background of disturbing results from the surveys. This may indicate that many schools and local education authority initiate development themselves, when they acquire more knowledge about the conditions, and that the national assessment system itself will contribute to development. The Evaluation of Reform 97 also confirms that teachers and head teachers are generally development oriented (Blichfeldt 2003)

Nevertheless it is reasonable to presume that some schools and municipalities will not respond in this way. It may be because of refusal of change or lack of knowledge about how

improvement may be achieved. Visscher et al. (2000) point out that if the gathering and publication of results shall lead to substantial improvements, it requires that the schools possess competence in how actually to do this. They point out that good schools know how they can improve, but bad schools do not. Therefore, the national assessment system must ensure intervention from outside, if ever-recurring weak results do not lead to changed practice locally. On this background the Government, in the Revised National Budget for 2003, has suggested to reorganise the national educational administration in order to direct it more towards emphasis on guidance, supervision and control. This does not deprive the municipalities of their responsibility for quality development in their schools, but it is meant to ensure that the schools, or the municipalities, are offered and bring into use development resources, and change practice in instances where this does not happen automatically.

National authorities shall also use results from the assessment system to identify areas where more effort is required. In Norway today, we spend relatively extensive resources on large national development projects. The reasons offered for these are not always very well founded on a documented need. We also know little about about what effect these projects have on the students' learning. The national competence development programme SAMTAK was launched in early 2000 with a time frame of three years. The programme has recently been evaluated. Lie et al. (2003) show that the schools to very varying degrees manage to make use of of the big national development projects, and that perhaps it is on time to think anew concerning school development. It is the most active and motivated among the parties in the target group that have got most out of the project. In this way SAMTAK has contributed to raising the competence of those who, at the starting point, were the most competent. This has led to the good becoming better, but the not quite so good have not changed their competence to any important degree. A consequence of this is that the differences between schools may have become bigger. The researchers find that the programme has had a rather rigid structure, and that there has been little space for developing local adaptations of the programme. The programme required that all participants developed at the same speed, and assumed that all schools had equal opportunities for change. This, the researchers assess as a weakness of the "top-down"-model, and they recommend that in the future, one ought to think out strategies for how to capture those who do not manage to make use of development programmes like these. Goals and local learning and development activities must become better adapted to each schools' particular requirements.

The Quality Committee, in its part report from 2002, pointed out the far more important roles that universities and colleges might play for the development of the schools. Also today, these institutions have a responsibility for offering development resources for the schools, but it varies greatly how comprehensive and successful this is. Considerable resources are spent on research at the teacher training institutions, but the schools are only to a small extent able to make use of the research. In the development of a national quality development system, the Government will look closer into how this interplay may be improved. There will also be a need for review how educational research to a larger extent, than is the case today, may contribute with knowledge that may be used for improving measures for quality development, both nationally and locally, and also how the individual teacher might make use of this knowledge

The newly established arrangement with good practice schools (demonstrasjonsskoler) has as its goal to contribute to positive development by collecting examples on and sharing information about good practice. It is too early to say anything about the effect of this arrangement yet.

5 Conclusion

The resource situation of schools is better in Norway than in most countries we compare ourselves with. The main explanation for the extensive use of resources, is that there are many teachers within the Norwegian school system compared to the number of students. Apparently only a smaller part of the expenditure might be explained with scattered settlement and the integration line. Econ (2003) also finds a pure "welfare effect". That is, rich countries allow themselves to pay for more teachers, because they have more money to spend. It becomes obvious to believe that this is an important explanation for the fact that we have a relative high teacher density in Norwegian schools. It is also reasonable that the schools should benefit from Norway being a rich country.

When the public debate, nevertheless, may give the impression of a resource crisis within the Norwegian school system, this may have various reasons. One point is that teachers have negotiated themselves to higher salaries against teaching more hours (Skolepakke 1 and 2). Seen in isolation, this has led to a reduced need for teachers the last couple of years, but in the media a distinction is not made between reduction of the number of jobs because of this and pure cutbacks. Secondly, to a large extent the resources are tied up for teacher's salaries, so that few "free" funds for equipment and visible activities are available. Examples of this are front-page news about theoretically based teaching in housekeeping, because the schools cannot afford raw materials.

A framework of rules and agreements which into detail regulates the teachers' working hours and the division into groups of the students, leads to a lack of flexibility which gives the impression of a lack of teachers. For instance, students may sit without a teacher, because the budget for temporary replacement has been used up.

Furthermore there is reason to believe that the public looks upon the school buildings as an indicator of the resource situation in school. It has been thoroughly documented that many municipalities have neglected their responsibility for maintaining municipal school buildings – perhaps even to a higher degree than what is the case with other municipal buildings (Econ 2002). This has brought upon the municipalities a lag in maintenance expenditure of a magnitude that has forced the State to resort to earmarked extra resources for the purpose. As of today we do not have enough knowledge about what mechanisms that contribute to a faulty administration of municipal buildings. For this reason a public committee will be appointed in the autumn of 2003 which is going to assess changes in the framework for municipal property management, including school buildings.

As mentioned by way of introduction, the Norwegian school system has many positive sides, even if we, in chapter 2 of the present report have focused on the challenges we face. The researcher Peder Haug sums up the situation in primary and lower secondary school as follows: " It gives little meaning to talk about the quality of the activities in primary and lower secondary school in the singular. On the contrary, the reality is that there are many qualities and in many areas. In some areas the evaluation concludes rather positively, in some areas there is great variation, and in some areas the situation is outright bad. In general the school is mentioned positively by both students, parents and teachers. They support the general values that this school is founded upon and wants to promote. Among these are ideals like inclusion and adapted teaching. All in all these groups assess it like this, that the school by and large holds high quality, and especially this goes for well-being, the social environment and the relationship between students and teachers. On the other hand, concerning what is being taught, there is great variation, both with regard to opinions, quality of the teaching and learning outcomes."(Haug 2003b)

International surveys of the students' knowledge and skills, and also the evaluation of Reform 97 have provided us with more knowledge about what we are good at, and where the shoe pinches. Summed up in short, what we know about quality problems within the Norwegian school system can be said like this:

- Far too many students do not acquire the absolutely basic skills;
- It is especially boys, minority language students and students from homes with few educational resources who are in danger of failing within the Norwegian school system.

It may seem as if the reason, among other things, lies in a lack of individual adaptation, clear demands, systematic assessment and follow-up in Norwegian schools, and also that many teachers and students do not have competence in the new ways of working which have been introduced on a grand scale.

Both Norwegian and international research find little effect on student achievement by increasing the resource allocations for the school. When the relationship between resources and results is weak, this is a view on the average which conceals that schools achieve good results with few resources, some achieve good results with big resources, other schools with very good resources achieve bad results, and yet others achieve bad results with few resources. The point about the research mentioned in chapter 3 is that research does not find that schools with much resources systematically achieve better results than other schools. This does not mean that we must use less resources within the Norwegian school system, but it means that we shall have to discuss other measures than general budget increases in order to heighten quality in the school.

The review of research concerning what contributes to the students' learning in Chapter 4, shows that the teacher is the single most important factor for success. The knowledge about this, makes it easy to resort to reforming teacher training, but research shows in all clarity that other factors may play an equally big role. Firstly the teaching profession must become attractive in order to attract those with the personal and professional background for becoming a good teacher. Furthermore, the teacher must – like employees in other knowledge-based sectors – be in constant development. In order for them to be able to use their abilities and their competence in the best possible way, they ought to have a workplace which has clear goals and expectations, which supports inspires and corrects in the daily work, and which rewards good efforts. Therefore school leaders and local education authorities have an important role to play in the development of quality and must be given space for action in order to be able to carry out this role in the best possible way. National authorities may contribute, not only by financing the training, or by setting national goals in the form of legislation and curricula, but also by devloping an infrastructure which arranges for assessment, follow-up and development.

References

Angrist, J.D. og Lavy, V. (1998): *Does teacher training affect pupil learning? Evidence from matched comparisons in Jerusalem public schools*. Working paper 6781. Cambridge: National Bureau of Economic research.

Baumert, J., Blum, W. og Neubrand, M. (2001). *Surveying the instructional conditions and domain-specific individual prerequisites for the development of mathematical competencies.* Paper presented at the special meeting on the co-ordination of national teacher components for PISA 2003, 28 May 2001, Munich, Germany.

Bergström, Fredrik og Mikael Sandström (2001): *Konkurrens bildar skola – en ESO-rapport om friskolornas betydelse för de kommunala skolorna*. ESO-rapport 2001:12. Finansdepartementet, Stockholm. http://www.finans.regeringen.se/eso/PDF/ds2001_12.pdf

Birkemo, Asbjørn (2002): *Læringsmiljø og utvikling*. Pedagogisk forskningsinstitutt, Universitetet i Oslo.

Blichfeldt, Jan Frode (2003): *Mot en ny samarbeidskultur*. Synteserapport fra delprosjekt «Lære for livet?».

Bonesrønning, Hans (2002a): *Class size effects on student achievement: Patterns and explanations.* Arbeidsnotat, Institutt for samfunnsøkonomi, NTNU, Trondheim. Også publisert i Southern Economic Journal vol 69, no 4. (2003).

Bonesrønning, Hans (2002b): Notat til Undervisnings- og forskningsdepartementet, 17. oktober 2002.

Bonesrønning, Hans (2002c): *Can effective teacher behavior be identified.* Arbeidsnotat, Institutt for samfunnsøkonomi, NTNU, Trondheim. Se også Bonesrønning Hans, Torberg Falch og Bjarne Strøm: *Teacher sorting, teacher quality, and student composition*. Kommer i European Economic Review i 2003.

Bonesrønning, Hans (2002d): *Peer group effects in education production: The importance of extreme student behavior*. Arbeidsnotat, Institutt for samfunnsøkonomi, NTNU, Trondheim.

Bonesrønning, Hans (2003): *Do the teachers' grading practices affect student achievement?* Education Economics (kommer i 2003).

Bonesrønning, Hans og Jørn Rattsø (1994): *Efficiency variation among the Norwegian high schools*. Economics of education review, nr. 13, s. 289-304.

Borge, Lars Erik, T. Falch og Pettersen (2002): Rapport om ressurssituasjonen i grunnskolen på oppdrag av Utdannings- og forskningsdepartementet. Allforsk.

Brophy, J. og T.L. Good (1986): *Teacher behavior and student achievement*. I M. Wittrock (red.): Third Handbook of Research on Teaching. New York: MacMillan.

Brophy, J. (1983): *Conceptualizing student motivation*. Educational Psychologist, 18(3).

Bungum, Brita, T. Dahl, B. Gulliksrud, T. Hugaas Molden, B. Rasmussen (2002): *Tid til en kollektiv og attraktiv skole Evaluering av sentralt initierte forsøk med alternative arbeidstidsordninger*. Trondheim: SINTEF Teknologiledelse IFIM.

Burgess, Simon, Bronwyn Croxson, Paul Gregg og Carol Propper (2001): *The Intricacies of the Relationship Between Pay and Performance for Teachers: Do Teachers respond to Performance Related Pay Schemes?* CMPO Working Paper Series nr. 01/35. Department of Economics, University of Bristol. http://www.bris.ac.uk/cmpo/wp35.pdf

Cold, Birgit (2003): *Skoleanlegget som lesebok. En studie av skoleanlegget som estetisk ramme for læring og velvære*. Synteserapport fra evalueringen av Reform 97. (NTNU.)

Coleman, James S., Thomas Hoffer og Sally Kilgore (1982): *High school achievement*. Basic Books, New York.

Creemers, B.P.M. (1994): *The effective classroom*. London: Cassell.

Dale, Erling Lars og Jarl Inge Wærness (2003): *Analyse av Elevinspektørene*. LS-publikasjon 7/2003, Oslo: Norwegian Board of Education.

Darling-Hammond, L. (1997): *The right to learn. A blueprint for creating schools that work*. San Francisco: Jossey-Bass Publishers.

Darling-Hammond, L., T.B. Barnett, D. Haselkorn, og E. Fideler (1999): *Teacher recruitment, selection and induction: policy influences on the supply and quality of teachers*. In: Darling-Hammond, L, og G. Sykes (red.) *Teaching as the learning profession: handbook of policy and practice*. San Francisco: Jossey-Bass Inc.

Darling-Hammond, L. (2000): *Teacher Quality and Student Achievement: A Review of State Policy Evidence*. Education Policy Analysis Archives, 8(1).http://olam.ed.asu.edu/epaa/v8n1/.

Dee, Thomas S. og Benjamin Keys (2001): *Does Merit Pay Reward Good Teachers? Evidence From a Randomized Experiment*. Paper, Swarthmore College, USA.

Delpit, L.D. (1988): *The silenced dialogue. Power and pedagogy in educating other people's children*. Harvard Educational Review, 58(3).

ECON (2002): *Organisering av kommunal eiendomsforvaltning*. Rapport nr. 18/02. ECON senter for økonomisk analyse.

ECON (2003): *Ressursbruk i skolen – statistiske analyser*. Rapport 86/02. ECON senter for økonomisk analyse.

Elley, Warwick B. (1992): *How in the world do students read? IEA study of reading literacy*. The International Association for the Evaluation of Educational Achievement.

Engen, L. et al. (2001): *Leseferdighet i 3. klasse våren 2001*. Senter for leseforskning. Høgskolen i Stavanger.

Engen, L. et al. (2003): *Leseferdighet i 2. og 3. klasse våren 2002*. Senter for leseforskning. Høgskolen i Stavanger.

Ericson, Ulla, Johan Fall og Anders Morin (2001): *Den svenska skolan – ger mer resurser bättre resultat?* Svenskt Näringsliv, Stockholm.

Ericsson, Kjersti og Guri Larsen (2000): *Skolebarn og skoleforeldre: Om forholdet mellom hjem og skole.* Pax Forlag.

Eurydice (2000): *Key topics in education in Europe, Vol. 2. Financing and Management of Resources in Compulsory Education. Trends in National Policies*. Directorate-General for Education and Culture, European Commission, Brussels. www.eurydice.org

Eurydice (2002): *Key data on education in Europe – 2002 edition*. Directorate-General for Education and Culture, European Commission, Brussels. www.eurydice.org

Eurydice (2002b)**:** Key Topics, Volume 3: The teaching profession in Europe: Profile, trends and concerns. Report 2: *Teacher supply and demand at general lower secondary level.* Directorate-General for Education and Culture, European Commission, Brussels.

Eurydice (2002c)**:** Key Topics, Volume 3: The teaching profession in Europe: Profile, trends and concerns. Report 1: *Initial teacher training.* Directorate-General for Education and Culture, European Commission, Brussels. www.eurydice.org

Ferguson, R.F., og H.L. Ladd (1996): *How and why money matters: An analysis of Alabama schools*. I H. F. Ladd (red.), *Holding schools accountable: Performance-based reform in education*. Washington, DC: The Brookings Institution

Ferguson, P. Og S.T. Womack (1993): *The impact of subject matter and education coursework on teaching performance*. Journal of Teacher Education, 44 (1).

Finstad, Nils og Gro Kvåle (2003): *Prosjekt Reform 97 og kommunene* - synteserapport Norlandsforskning.

Fowler, Francis C. (2003): *School Choice: Silver Bullet, Social Threat, or Sound Policy?* Educational Researcher (Vol. 32, No. 2) March 2003.
http://www.aera.net/pubs/er/pdf/vol32_02/AERA320207.pdf

Gamoran, A., A.C. Porter, J. Smithson, og P.A. White (1997): *Upgrading high school mathematics instruction: Improving learning opportunities for low-income, low-achieving youth*. Educational Evaluation and Policy Analysis, 19.

Gill, Brian P., P. Michael Timpane, Karen E. Ross og Dominic J. Brewer (2001): *Rhetoric Versus Reality: What We Know and What We Need to Know About Vouchers and Charter Schools*. Rand, Washington D.C. http://www.rand.org/publications/MR/MR1118/

Goldhaber, D.D., og D.J. Brewer (1997*): Evaluating the effect of teacher degree level on educational performance*. I W. J. Fowler (red.): *Developments in school finance 1996*. Washington, D.C.: National Center for Education Statistics, U.S. Department of Education.

Goldhaber, Dan (2000): *School Chioce: Do We Know Enough*? Educational Researcher, Vol. 29, No. 8.

Goldhaber, Dan (2002): *The Mystery of Good Teaching*. Education Next, Våren 2002.
http://www.educationnext.org/20021/50.pdf

Gordon, N. (1997): *Nutrition and cognitive function.* Brain-and-Development. *19 (3).*

Greenwald, R., L.V. Hedges og R.D. Laine (1996a): *The effect of school resources on student achievement. Review of Educational Research*, 66 (3), s. 361-396.

Greenwald, R., L.V. Hedges og R.D. Laine (1996b): *Interpreting research on school resources and student achievement*. Review of Educational Research, 66 (3), s. 411-16.

Grosin, Lennart (2002): *Rektorer i framgångsrika skolor*. Nordisk pedagogik 3/2002 Vol. 22.

Grøgaard, Jens B. (1997): *Skolekontroversen belyst ved to norske utvalgsundersøkelser*. Dr.gradsavhandling. Fafo-rapport 222, Forskningsstiftelsen Fafo.

Grøgaard, Jens B. (2002): *Integrerte eller segregerte undervisningsopplegg i videregående opplæring: Hvilke gir best resultater?* Tidsskrift for ungdomsforskning 2/2002.

Grøterud, Marit og Bjørn S. Nilsen (1997): *Effektiv skole – effektiv undervisning? Et spørsmål om verdier.* Ad Notam Gyldendal.

Gundlach, Erich, Ludger Wößmann og Jens Gmelin (2001): *The decline of schooling productivity in OECD countries*. Economic Journal, Vol. 111 (May).
http://www.st-and.ac.uk/~res2000/papers/pdffiles/wednesday/woessmann.pdf

Gustafsson, Jan-Eric og Eva Myrberg (2002): *Ekonomiska resursers betydelse för pedagogiska resultat – en kunskapsöversikt*. Skolverket, Stockholm.
http://www2.skolverket.se/BASIS/skolbok/webext/trycksak/DDD/999.pdf

Gustafsson, Jan-Eric (2003): *What do we know about effects of school resources on educational results?* Paper presentert på konferansen: What can educational policies achieve? Stockholm: Näringslivets hus, 17. mars 2003

Hallinger, P. og J. Murphy (1986): *The social context of effective schools*. American Journal of Education 94.

Hanushek, Eric A. (1986): *The economics of schooling. Production and efficiency in public schools*. Journal of Economic Literature, 24 (3).

Hanushek, Eric A. (1996): *School resources and student performance*. I Gary Burtless (red): *Does money matter? The effect of school resources on student achievement and adult success*. Brookings Institution, Washington D.C.

Hanushek, Eric A. (1997): *Assessing the effects of school resources on student performance: An update*. Educational Evaluation and Policy Analysis, 19 (2).

Hanushek, Eric A., J.F. Kain, og S.G. Rivkin (1998): *Teachers, schools and academic achievement.* National Bureau of Economic Research, Working Paper 6691.

Hanushek, Eric A. (1999): *The Evidence on Class Size*. I Susan E. Mayer og Paul Peterson (red.): *Earning and Learning: How Schools Matter*. Brookings Institution, Washington, D.C. http://edpro.stanford.edu/eah/down.htm#size

Hanushek, Eric A. og Javier A. Luque (2001): *Efficency and Equity in Schools around the world*. Publiseres 2003 i Economics of Education Review, Vol 22, no. 4. http://www.worldbank.org/education/economicsed/research/econseries/hanushek.pdf

Hanushek, Eric A. (2002a): *Evidence, politics, and the class size debate*. I L. Mishel og R. Rothstein: *The Class Size Debate*. Economic Policy Institute, Washington, D.C. http://www.epinet.org/books/classsizedebate.pdf

Hanushek, Eric A. (2002b): *The failure of input-based schooling policies*. NBER Working Paper nr. 9040. Vil bli trykket i Economic Journal. http://edpro.stanford.edu/eah/papers/input.pdf

Hanushek, Eric A. og Margaret E. Raymond (2002): *Improving Educational Quality: How Best to Evaluate Our Schools*. Konferansepaper, juni 2002. http://edpro.stanford.edu/eah/papers/accountability.BostonFed.publication prosent20version.pdf

Harrison, Colin, Chris Comber, Tony Fisher, Kaye Haw, Cathy Lewin, Eric Lunzer, Angela McFarlane, Diane Mavers, Peter Scrimshaw, Bridget Somekh og Rob Watling (2003): *ImpaCT2; The Impact of Information and Communication Technologies on Pupil Learning and Attainment*. Full report, Becta, March 2003. http://www.becta.org.uk/impact2

Haug, Peder, Jan Tøssebro og Monica Dalen (red.) (1999): *Den mangfaldige spesialundervisninga. Status for forskning om spesialundervisning*. Oslo 1999.

Haug, Peder (2002): *Normal og spesial i grunnskulen*. Høgskulen i Volda. Avdeling for lærarutdanning.

Haug, Peder (2003): *Får forskningsresultat konsekvensar for lærarutdanninga?* Avslutningsforedrag på konferansen Evaluering av Reform 97. Høgskolen i Oslo 13. mars 2003.

Haug, Peder (2003b): *Evalueringa av Reform 97: Sentrale resultat***.** Presentert på Sluttkonferansen i Program for evaluering av Reform 97. Folkets hus, Oslo 26.-27. mai 2003. http://www.forskningsradet.no/fag/ks/r97syntesehaug.htm

Heen, H. (2003): *Skolen som selvfølge. Om foreldrenes møte med "den nye" skolen*. I G. Imsen (red.): *Det ustyrlige klasserommet. Om styring, samarbeid og læringsmiljø i grunnskolen*. Oslo: Universitetsforlaget.

Helgesen, Marit (2003): *Barns behov eller foreldres særinteresser? Foreldres motiver for å velge privat skole for sine barn*. NIBR-rapport 2003:8.

Hernes, Gudmund og Knud Knudsen (1974): *Utdanning og ulikhet*. NOU 1976: 46.

Hoxby, Caroline M. (1996): *How Teachers' Unions Affect Education Production*. The Quarterly Journal of Economics. August 1996. http://post.economics.harvard.edu/faculty/hoxby/papers

Hoxby, Caroline M. (2003*): School Choice and School Competition: Evidence from the United States*. Paper presentert på konferansen: What can educational policies achieve? Stockholm, 17. mars 2003 http://post.economics.harvard.edu/faculty/hoxby/papers/sweden.pdf

Hustad, Jon (2002): *Skolen som forsvann. Eit essay om krisa i den norske skolen*. Samlaget.

IEA (2003): *PIRLS 2001 International Report*. International Association for the Evaluation of Educational Achievement.

Imsen, Gunn (2003): *Skolemiljø, læringsmiljø og elevutbytte*. Synteserapport fra prosjektet ”Læringsmiljøets betydning for elevenes utbytte av skolen”. April 2003.

Karni, V., D. Tanne, B.S. Rubenstien og J.J.M. Askenasy (1994): *Dependence on REM sleep of overnight improvement of a perceptual skill.* Science, 265(5172).

Klette, Kirsti et al. (2003): *Klasserommets praksisformer etter Reform 97* (Synteserapport). Pedagogisk forskningsinstitutt, Universitetet i Oslo.

Klitgaard, R. E., og Hall, G. R. (1974): *Are there unusually effective schools?* Journal of Human Resources, 10(3).

Krueger, Alan B. (2000): *Economic Considerations and class size*. Working paper nr. 447. Princeton University, Industrial Relations Section.

Krueger, Alan B. (2002): *Economic Considerations and class size*. NBER Working paper nr. 8875. Oppdatering av Krueger 2000. National Bureau of Economic Research, Cambridge, Mass.

Krueger, Alan B. og M. Lindahl (2002): *The school’s need for resources – An ESO-report about the importance of small classes*. Finansdepartementet, Stockholm. http://www.finans.regeringen.se/eso/PDF/ds2002_12e.pdf

Ladd, Helen F. (2002): *School Vouchers: A Critical Review*. The Journal of Economic Perspectives, Vol. 16 No 4, Fall 2002.

Langfeldt, Gjert (2003): *Does Special Education contribute to inclusive education?* Paper presented at NFPF Conference 6-9.03.03

Lavy, Victor (2001): *Evaluating the Effect of Teacher’s Performance Incentives on Pupil Achievements.* Hebrew University of Jerusalem, revidert august 2001. http://cee.lse.ac.uk/Conference prosent20Papers/teacher prosent20pay prosent20and prosent20incentives/Lavy.pdf

Lie, Svein, Carl Angell og Marit Kjærnsli (1998): *Kunnskaper og holdninger i realfag i videregående skole. En foreløpig rapport med resultater fra populasjon 3 i TIMSS-prosjektet*. TIMSS-rapport nr. 29. Institutt for Lærerutdanning og Skoleutvikling, Universitetet i Oslo. http://www.ils.uio.no/forskning/timss/rapport29/rapport29.html

Lie, Svein, Marit Kjærnsli, Astrid Roe og Are Turmo (2001): *Godt rustet for framtida? Norske 15-åringers kompetanse i lesing og realfag i et internasjonalt perspektiv*. PISA/Institutt for Lærerutdanning og Skoleutvikling, Universitetet i Oslo. http://folk.uio.no/rolfvo/Hele_rapporten.pdf

Lie, Terje, Jorunn Tharaldsen, Sverre Nesvåg, Espen Olsen og Olav Befring (2003): *På fruktene skal treet kjennes – Evalueringen av Samtak.* Rapport fra Rogalandsforskning 2003/028.

Lyng, S.T. (2003): *"- men alligavel er det ikkje gildt"? Dilemmaer i ungdomsskolens prosjektarbeid*. I G. Imsen (red.): *Det ustyrlige klasserommet. Om styring, samarbeid og læringsmiljø i grunnskolen.* Oslo: Universitetsforlaget.

Norwegian Board of Education (2003): *Tilstandsrapport for utdanningssektoren 2002*.

Martin, Michael O., Ina V.S. Mullis, Kelvin D. Gregory, Craig Hoyle og Ce Shen (2000): *Effective Schools in Science and Mathematics: IEA’s Third International Mathematics and Science Study*. IEA TIMSS International Study Center, Chestnut Hill, Massachusetts. http://timss.bc.edu/timss1995i/TIMSSPDF/T95_EffSchool.pdf

Mikkelsen, Rolf, Elisabeth Buk-Berge, Hein Ellingsen, Dag Fjeldstad og Annette Sund (2001): *Demokratisk beredskap og engasjement hos 9. klassinger i Norge og 27 andre land*. IEA Civic Education Study Norge 2001. Institutt for lærerutdanning og skoleutvikling, Universitetet i Oslo.

http://www.ils.uio.no/forskning/civic/rapporter/rapporter1.html Se også Torney-Purta, Judith et al. (2001): *Citizenship and Education in Twenty-eight Countries: Civic Knowledge and Engagement at Age Fourteen*.

Mikkelsen, Rolf, Dag Fjeldstad og Hein Ellingsen (2002): *Demokratisk beredskap og engasjement hos elever i videregående skole i Norge og 13 andre land*. IEA Civic Education Study Norge 2002. Institutt for lærerutdanning og skoleutvikling, Universitetet i Oslo. http://www.ils.uio.no/forskning/civic/rapporter/rapporter2.html

Monk, D.H. (1994): *Subject matter preparation of secondary mathematics and science teachers and student achievement*. Economics of Education Review, 13 (2).

Murnane, R.J., og B.R. Phillips (1981): *Learning by doing, vintage and selection: Three pieces of the puzzle relating teacher experience and teaching performance*. Economics of Education Review, 1(4).

Møller, Jorunn og Jan Merok Paulsen (2001): *Skolelederes arbeidsforhold i grunnskolen*. ILS/UiO, Acta didactica 3/2001. www.ils.uio.no/omenheten/publikasjoner/actadidactica/

Nannestad, Peter (2003): *It's not the Economy, Stupid! Municipal School Expenditures and School Achievement Levels in Denmark*. Paper presentert på EPCS årsmøte i Aarhus 25.-28. april 2003. http://www.econ.au.dk/epcs/papers/nannestad.pdf

Nordahl, Thomas og Terje Overland (1998): *Idealer og realiteter. Evaluering av spesialundervisningen i Oslo kommune*. NOVA.

Nordahl, Thomas (2003): *Foreldre i skolen*. Synteserapport fra evalueringen av Reform 97. NOVA. Samt uttalelser i forbindelse med dette prosjektet.

Norsk Gallup (2001): *Befolkningens vurdering av bostedskommunen og de offentlige tjenester. Norsk Gallup Institutts nasjonale befolknings- og brukerundersøkelse 2000*. Norsk Gallup Institutt, avdeling offentlig, mai 2001.

OECD (1999): *Inclusive Education at Work: Students with Disabilities in Mainstream Schools*. OECD, Paris.

OECD (2001b): *Knowledge and Skills for Life – First Results from PISA 2000*. OECD, Paris.

OECD (2001c): *The Well-being of Nations. The Role of Human and Social Capital*. OECD, Paris.

OECD (2002): *Education at a Glance, 2002 edition*. OECD, Paris.

Olweus, Dan (2002): *Mobbing i skolen: Nye data om omfang og forandring over tid*. HEMIL-senteret, Universitetet i Bergen. http://www.uib.no/psyfa/hemil/mobbing/MobbingNyeData.doc

Rasch-Halvorsen, Anne og Håvard Johnsbråten (2002): *Norsk Matematikkråds undersøkelse blant nye studenter 2000 og 2001*. Rapporter utarbeidet for Norsk Matematikkråd ved Høgskolen i Telemark avd. EFL Notodden. http://www.mi.uib.no/nmr/

Rivkin, Steven G., Eric A. Hanushek og John F. Kain (2002): *Teachers, schools and academic achievement*. Working paper nr. 6691, National Bureau of Economic Research, Washington, D.C. Opprinnelig utgitt juli 1998, revidert juli 2002. http://edpro.stanford.edu/eah/papers/basic.july2002.PDF

Roschelle, Jeremy M., Roy D. Pea, Christopher M. Hoadley, Douglas N. Gordin og Barbara M. Means (2000): *Changing How and What Children Learn in School with Computer-Based Technologies*. Future of Children Journal, Vol. 10, Nr. 2. http://www.futureofchildren.org/usr_doc/vol10no2Art4.pdf

Rossow, Ingeborg (2003): *Ungdommen nå til dags – tall fra «Ung i Norge 2002»*. Tidsskrift for ungdomsforskning 1/2003.

Rowan, B., F.S. Chiang og R.J. Miller (1997): *Using research on employees' performance to study the effects of teachers on students' achievement*. Sociology of Education 70(4).

Rønning, Wenche (2002): *Likeverdig skole i praksis*. NF-rapport nr. 18 2002. Nordlandsforskning.

Sandström, Mikael (2002): *Rätt att välja: Hur konkurrens leder til bättre skolor*. Timbro/CVV, Stockholm.

Santiago, P. (2001): *Teachers: Managing demand and supply*. A conceptual framework, empirical evidence on the effects of policy tools on student achievement, and an assessment of relevant data needs. Paris: OECD.

Saunders, William og S.P. Horn (1998): *Research Findings from the Tennessee Value-Added Assessment System (TVAAS) Database: Implications for Educational Evaluation and Research*. Journal of Personnel Evaluation in Education, nr. 3.

Schacter, John (2001): *Teacher Performance-Based Accountability: Why, What and How*. Milken Family Foundation, Santa Monica. http://www.mff.org/pubs/performance_assessment.pdf

Scheerens, J. Og R.J. Bosker (1997): *The foundations of educational effectiveness*. Oxford: Elsevier Science Ltd.

Schøne, Pål (1999): *Avgang og rekruttering i undervisningssektoren - hva betyr lønn?* Rapport 99:12, Institutt for samfunnsforskning.

Schleicher, Andreas (2003): Foredrag i UFD 9. januar 2003.

Senter for leseforskning (2003): *Slik leser 10-åringer i Norge. En kartlegging av leseferdighetene blant 10-åringer i Norge 2001*. Senter for leseforskning, Høgskolen i Stavanger.

Severud, Jon (2003): *Ubehaget i skolen*. Universitetsforlaget.

Skogen, Kjell, Kari Nes og Marit Strømstad (2003): *Reform 97 og inkluderingsidéen*. Synteserapport fra evalueringen av Reform 97.

Skolverket (1999): *Samband mellan resurser och resultater: En studie av landets grundskolor med elever i årskurs 9*. Skolverkets rapport nr. 170.

http://www2.skolverket.se/BASIS/skolbok/webext/trycksak/DDD/529.pdf

Skolverket (2003): *Valfrihet og dess effekter inom skolområdet*.

Solheim, Ragnar G., Finn E. Tønnesen og Marit Petersen Oftedal (2002): *Leseferdighet i 7. klasse høsten 2001*. Senter for leseforskning, Høgskolen i Stavanger.

Solstad, Karl Jan (1997): *Equity at Risk. Planned Educational Change in Norway: Pitfalls and Progress*. Oslo: Skandinavian University Press.

Solstad, Karl Jan og Wenche Rønning (2003): *Likeverdig skole i praksis* (Synteserapport). Nordlandsforskning.

Solvang, P. (1999): *Skriftspråk, læring og avvik*. Rapport 3. Senter for samfunnsforskning.

Strømstad, Nes og Skogen (2003): *Inkludering i innovasjonsperspektiv. En vurdering av kurs i forbindelse med innføringen av Reform 97. Erfaringer med «Inkluderingshåndboka» som instrument for skoleutvikling*. Under publisering. Høgskolen i Hedmark.

Statistisk sentralbyrå (2003): *Lønnsstatistikk. Ansatte i skoleverket, per 1. oktober 2002*. http://www.ssb.no/emner/06/05/lonnskole/

TES (2003): *Teachers underrate overweight girls*. Oppslag i The Times Educational Supplement. 23. mai 2003.

TIMSS: En rekke rapporter er publisert og er tilgjengelige på http://timss.bc.edu/isc/isc_publications.html.

Utdanning (2003): *Hardt arbeid gir gode lesere*. Artikkel i bladet Utdanning Nr. 9 2003. Utgitt av Utdanningsforbundet.

Visscher, A., S. Karsten, T. de Jong og R. Bosker (2000): *Evidence on the Intended and Unintended Effects of Publishing School Performance Indicators*. Evaluation of Research in Education Vol 14, No. 3 og 4, 2000.
http://angelina.catchword.com/vl=64887980/cl=20/nw=1/fm=docpdf/rpsv/catchword/mm/09500790/v14n3/s11/p254

Wayne, A.J. og P. Youngs (2001*): Teacher characteristics and student achievement gains: A review*. Paper presented at the annual meeting of the Association for Public Policy Analysis and Management, Washington, D.C., November 2, 2001.

Welle-Strand, Anne og A. Tjeldvoll (2002): *The Norwegian unified school – a paradise lost*? Journal of Education Policy 2002, Vol. 17, No. 6.

Wößmann, Ludger (2000): *Schooling rescources, educational institutions, and student performance: The international evidence*. Working Paper nr. 983. Kiel Institute of World Economics, Kiel. Kommer i Oxford Bulletin of Economic Research i 2003. Artikkel basert på ovenstående: *Why Student in Some Countries do Better*. Education Next, Summer 2001.
http://www.educationnext.org/unabridged/20012/woessmann.pdf
http://www.educationnext.org/20012/67.html

Wößmann, Ludger (2001): *New Evidence on the Missing Resource-Performance Link in Education.* Working Paper nr. 1051. Kiel Institute of World Economics, Kiel.
http://www.uni-kiel.de/ifw/pub/kap/2001/kap1051.pdf

Øzerk, Kamil (2003): *Sampedagogikk.* Oplandske bokforlag.