Chapter 4
The Quality of Education in the Netherlands, as Expressed by Achievement and Attainment Indicators

Abstract In Chapter 4 various kinds of currently available data are used to reach an overall evaluation of the quality of Dutch education (primary and secondary level). The conclusions are as follows: Dutch students consistently achieve scores on international assessments which are (far) above average in international comparisons. The Netherlands generally fares very well in such studies, certainly compared to other countries in Europe. It occupies a slightly lower position on the global rankings due to the exceptionally high scores of countries such as Japan, Singapore, Korea and Taiwan. In terms of development over time between 1995 and 2006, we are able to draw upon no fewer than fifteen international comparisons, of which only three indicate any statistically significant decline in performance. It is therefore inappropriate to state that there has been any clear decline in student achievement but at the same time, it is equally inappropriate to claim that there has been any marked improvement. The trend is broadly similar for all age groups and in all key subjects. The chapter also draws conclusions on the basis of the national assessment program (PPON), equity indicators and educational attainment indicators. Altogether a rather positive picture emerges.

Keywords Educational Achievement · Educational Attainment · International Assessment studies · Equity · Socio economic background of students

4.1 The Netherlands' Results in Various International Assessments (TIMSS, PISA and PIRLS)

Since the 1990s, the Netherlands has taken part in numerous international comparative assessments examining the learning achievement and attainment of students in primary and secondary education. A significant amount of data is

J. Scheerens et al. (eds.), *Perspectives on Educational Quality*,
SpringerBriefs in Education, DOI: 10.1007/978-94-007-0926-3_4,

therefore available. The surveys involve standardised tests in literacy skills, mathematics, general science and problem-solving, taken by schoolchildren in a large number of countries worldwide. The results enable a 'benchmarking' comparison and allow trends to be tracked over time. The conclusions with regard to changing educational standards are set against the findings of the *Periodiek Peilingonderzoek van het Onderwijsniveau in Nederland* (Periodic Survey of Educational Level in the Netherlands; see Van der Schoot 2008) and those of the Inspectorate of Education.

In 1995, the International Association for the Evaluation of Educational Achievement (IEA) introduced its four-yearly Trends in International Mathematics and Science Study (TIMSS), followed in 2001 by the Progress in International Reading Literacy Study (PIRLS). In 2000, the Organisation for Economic Cooperation and Development (OECD) launched the Programme for International Student Assessment (PISA), which examines the performance of students aged 15 in reading, mathematics, science and problem-solving, doing so at three-yearly intervals.

The survey population for the PIRLS comprises children in primary education, specifically those in Grade 4 (aged 10–11). The TIMSS survey involves students in both primary and secondary education. In 1995, it focused on primary grades 3 and 4 and on the first 2 years of secondary education (grades 7 and 8). Later surveys involved only primary grade 4 and second-year secondary school students. In 1999, the Netherlands opted to have only the secondary school students take part and in 2007 only the primary school pupils. In 2003, both groups were involved in the TIMSS survey. The Netherlands has taken part in both PIRLS assessments to date as well as all PISA assessments.

4.2 International Research: Problems and Limitations

Before discussing the findings of the various surveys, we must briefly consider two significant problems which are inherent in this type of research: the 'test-curriculum overlap', and the difficulties in defining and operationalising the respondent population. A further problem which is often apparent in the Netherlands is that many schools are reluctant to lend their cooperation to this type of study. The low response rate may seriously distort the results.

4.2.1 Test-Curriculum Overlap

A major advantage of the TIMSS, PIRLS and PISA surveys is that precisely the same test is presented to students in each country. However, this does not mean that a direct comparison can be made. It is inevitable that some countries will have a curriculum which is more closely aligned with the test than others. This problem

seems to be most apparent in the TIMSS surveys. Both the PIRLS and the PISA are more concerned with general cognitive skills, which are not directly related to the detailed curriculum. By contrast, the TIMSS tests in mathematics and general science have a far more explicit relationship with the national learning objectives and course content. Given the large number of countries taking part, it is inevitable that students will be required to answer questions on matters which they have yet to cover in the classroom, or which may not form part of their curriculum at all. The TIMSS therefore strives to be 'equally unfair to all'. Moreover, each country is given the opportunity to indicate (based on the opinions of national curriculum experts) which items within the test are in line with their national curriculum and which are not. This enables each country to decide for itself how well its students are performing in those subjects to which the national curriculum devotes greatest attention. Remarkably, this process leads to little or no change in the international ranking. Even where a country bases its international position solely on those items which its experts consider to be relevant, that position remains very close to one based on scores which ignore the test-curriculum overlap.

4.2.2 Definition and Operationalisation of the Respondent Population

The process of comparing assessment scores in various countries is further complicated where there are significant differences between the research populations. The participation rate varies greatly from one country to another, particularly at secondary education level. This problem is especially relevant when non-industrialised countries are included in the surveys and again is more acute in terms of secondary education. For the Netherlands, a comparison with countries having a similar level of economic development is generally more relevant.

The student populations in the various countries can also differ in terms of average age. This problem is only really significant in the TIMSS and PIRLS surveys, since the PISA specifically defines the research population by age: each school is requested to present the test to all pupils born in a certain year, regardless of the grade to which they have been assigned. In the TIMSS and PIRLS surveys, entire classes within a certain grade are selected, regardless of student age. As a result, the respondent population in countries with a relatively high percentage of 'delayed' students who have been required to repeat a year (such as the Netherlands) will include a greater proportion of somewhat older students, whereupon the average age of the research population will be higher.

Another factor that can influence the comparability of results is the number of students in special education. These students are not included in the research population for the international assessments but the criteria by which students are selected for special education vary from one country to another, whereupon the research population in one country may include students who would have been

Table 4.1 The Netherlands' results in TIMSS, PIRLS and PISA surveys

Survey	Mathematics		Science		Reading		Problem-solving	
	Score	Position	Score	Position	Score	Position	Score	Position
TIMSS 95—3	493	6 (24)	499	6 (24)				
TIMSS 95—4	577	5 (26)	557	6 (26)				
TIMSS 95—7	516	7 (39)	517	10 (39)				
TIMSS 95—8	541	9 (41)	560	6 (41)				
TIMSS 99—8	540	7 (39)	545	6 (39)				
TIMSS 03—4	540	6 (25)	525	10 (25)				
TIMSS 03—8	536	7 (45)	536	8 (45)				
TIMSS 07—4	535	9 (36)	523	17 (36)				
PIRLS 01					554	2 (35)		
PIRLS 06					547	12 (45)		
PISA 00	564	1 (42)	529	6 (42)	532	3 (42)		
PISA 03	538	4 (40)	521	8 (40)	513	9 (40)	520	12 (40)
PISA 06	531	5 (57)	525	9 (57)	507	10 (57)		
PISA 09	526	11 (66)	522	11 (66)	508	10 (66)		

excluded in another. One possible reason for the remarkably high averages achieved by Dutch students in the 2000 PISA survey (see Table 4.1) is that the research population excluded all students in special education or remedial streams (Knecht-Van Eekelen et al. 2007). In 2002, reforms were introduced whereby many of these students now attend mainstream schools (with additional support), whereupon they did indeed take part in the 2003 and 2006 PISA studies.

4.2.3 Low Response Rate in the Netherlands

Dutch schools have never shown a marked willingness to take part in surveys. The response rate in international comparative assessments is often conspicuously low. It is possible that this distorts results, especially if schools decline to take part because they expect their students to achieve low scores. The low response rate for PISA 2000 (25%) resulted in the Netherlands' score being excluded from the international reports altogether. However, supplementary research (Wijnstra 2001) established that the schools which did take part were 'typical' of the Netherlands, achieving grades in national examinations which showed very little variance from the national average. The results of PISA 2000 may well have been distorted by other factors, such as those described above. The researchers conclude that schools generally decline to take part in the international surveys because they regard the burden on both students and staff to be disproportionate to the (meagre) recompense offered. Fear of low scores is not a significant factor, given that schools are not rewarded or penalised in any way based on the scores that their students achieve in the TIMSS, PIRLS or PISA surveys.

Table 4.2 Trends in learning performance in the Netherlands

	Mathematics		Science		Reading	
	Deviation	SE	Deviation	SE	Deviation	SE
TIMSS						
99-95 (sec. year 2)	11	9.5	3	9.1		
03-99 (sec. year 2)	−4	8.1	−9	7.6		
07-03 (Grade 4)	−5	3.0	−2	3.1		
03-95 (Grade 4)	**−9**	3.7	−5	3.5		
03-95 (sec. year 2)	7	7.3	−6	6.8		
07-95 (Grade 4)	**−14**	3.7	−7	4.0		
PIRLS						
01-06 (Grade 4)					**−7**	2.9
PISA						
06-03 (15-year-olds)	−7	4.3			−6	6.1

Deviations of statistical significance ($\alpha < 0.05$ in a dual symmetrical test) appear in bold type

4.3 The Netherlands in TIMSS, PIRLS and PISA

Table 4.1 presents the Netherlands' most important results in the various TIMSS (Beaton et al., 1996a, b; Martin et al., 1997, 2000, 2004, 2008; Mullis et al., 1997, 2000, 2004, 2008), PISA (OECD, 2001, 2004a, b, 2007a, b, 2010) and PIRLS (Mullis et al., 2003, 2007) surveys to date. It shows the average score for each subject and the relative position of Dutch students compared to their international counterparts. The total number of participating countries is shown in brackets. The assessment scores are calculated in such a way as to ensure that the international average is always 500, with a standard deviation of 100. The scores shown for TIMSS 95 relate to primary Grade 4 and secondary Grade 8 students.

As Table 4.1 clearly demonstrates, Dutch students have consistently achieved scores which are (well) above the international average. The Netherlands generally shows good performance in these international studies, particularly when compared to other European countries. It achieves a slightly lower position on the global ranking due to the exceptionally high scores achieved by countries such as Japan, Singapore, Korea and Taiwan. The Dutch students' scores for science are generally slightly lower than those for reading and mathematics. The figures presented in Table 4.1 seem to suggest a (slight) downwards trend in mathematics, science and reading alike. However, the scores in successive surveys cannot be directly compared, since the calculation methods used vary from 1 year to the next. The most recent TIMSS, PIRLS and PISA reports do however include an analysis of the development in each country's scores (see Table 4.2).

In this context, it is appropriate to recall the conclusion reached by Rindermann (2007). This study examined the correlations between the national scores in a large number of international comparative surveys (TIMSS, PIRLS, PISA and several others). Based on an analysis of the average scores for various skills and subjects (e.g., numeracy vs. literacy), research populations (primary vs. secondary) and

points in time, Rindermann reports very strong correlations (often >0.90) between the various national averages. He concludes that despite the differences in the form and structure of the various comparisons, the average scores remain largely representative of the central construct, i.e., general cognitive skills at the national level. If students in a particular country achieve a high score for literacy and reading, they are also likely to achieve a high score for mathematics. If primary school children perform well, secondary school students are likely to do likewise. Moreover, Rindermann shows the scores to be extremely stable over time.

4.4 Development Over Time: Trends

Table 4.2 shows the change in the performance of Dutch students as revealed by the successive TIMSS, PIRLS and PISA assessments. The figures in the table refer to the difference between two measurements and the relevant standard errors. Most differences are statistically insignificant ($\alpha < 0.05$ in a two-tailed test) but there are three statistically significant results which indicate a (slight) decrease in performance. In fact, 12 of the 15 reported differences indicate a decline. It would be inappropriate to conclude that the international comparative surveys provide evidence of worsening performance on the part of Dutch students, although neither do they suggest any improvement.

Little difference can be seen in the trends for each subject or age group. Insofar as there is any actual decline in learning achievement, it would seem to be at both the primary and secondary level. Recent criticism (in political circles and in the media) of the quality of Dutch education has chiefly been directed at secondary education. However, Table 4.2 shows no statistically significant decline in this sector. In terms of primary education, the criticism is largely concerned with numeracy and mathematics. However, the figures also suggest a slight decline in literacy and reading skills. It is interesting to note that the indications of worsening learning achievement offered by the international surveys are not confirmed by the more detailed national 'PPON' surveys, which have been conducted by CITO since 1987, as described in greater detail below. The biannual PRIMA cohort studies actually show an improvement in language and numeracy skills between 1994 and 2002 (Mulder et al. 2005). The dataset used by PRIMA relies on two random samples of schools, the first of which is representative of the entire country. A supplementary sample is then drawn from those schools with a high proportion of 'disadvantaged' students. This makes it possible to accurately monitor the progress of all students whose parents have low educational attainment, regardless of ethnicity. Numeracy and literacy tests are given to students in the final kindergarten year and in Grades 0, 2, 4 and 6. Improvement was particularly noticeable among the younger students. In 2007, a new cohort study ($COOL^{5-18}$) was introduced.

It is possible that changes in learning performance are related to changes in the composition of the student population. The reduction in the number of students referred to special education would seem to be relevant in this respect.

Table 4.3 The proportion (%) of primary-age students in special education in the Netherlands, 1994–2010

School year	Student total	Number of students in special education	Percentage
1994/1995	14,82,918	56,385	3.8
1995/1996	15,08,145	57,090	3.8
1996/1997	15,57,176	55,575	3.6
1997/1998	15,74,831	54,635	3.5
1998/1999	15,87,539	53,611	3.4
1999/2000	15,97,268	52,120	3.3
2000/2001	15,98,106	51,558	3.2
2001/2002	16,04,346	51,856	3.2
2002/2003	16,02,045	52,077	3.3
2003/2004	15,99,228	51,499	3.2
2004/2005	15,99,227	50,088	3.1
2005/2006	15,97,777	48,318	3.0
2006/2007	15,95,279	46,310	2.9
2007/2008	15,97,480	44,932	2.8
2008/2009	15,97,387	44,055	2.8
2009/2010	15,91,774	43,325	2.7

Source http://statline.CBS.nl

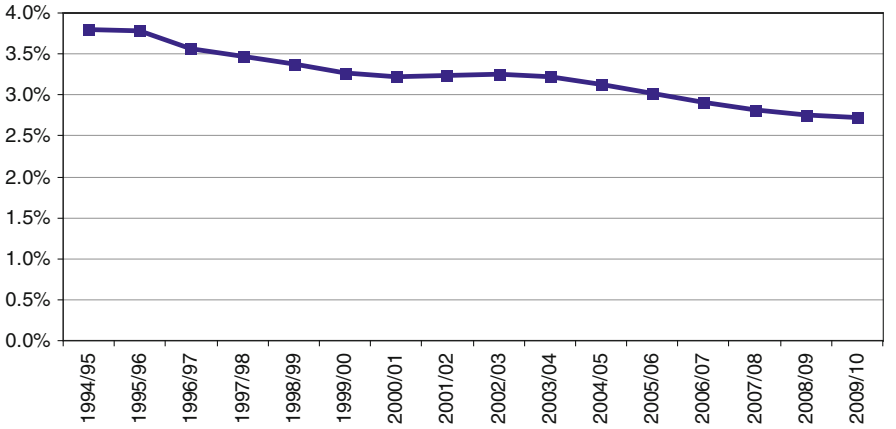

Fig. 4.1 Percentage of primary students in special education, 1984–2010

Table 4.3 shows the total number of students in primary education and the number in special education during the period 1994–2010. Although the overall student population increased, the number of students in special education decreased. The proportion of students receiving special education fell from 3.8% during the 1994–1995 school year to 2.7% in 2009–2010, as illustrated in Fig. 4.1. Inclusion in mainstream education is probably better for the cognitive development of the individual student. For statistical purposes, however, the inclusion in general assessments of students with learning difficulties (who would

have been referred to special education in the past) is likely to have a negative impact on the average scores.

Finally, it should be remembered that learning performance and achievement are not only determined by the quality of education but can be influenced by factors outside the school context. Family circumstances, social interaction and the extracurricular activities in which students engage will go some way towards determining the overall level of educational achievement and attainment and changes in any aspect can bring about changes in performance.

4.5 Trends in Educational Achievement Revealed by PPON Surveys

Since 1987, the CITO has conducted systematic and periodic assessments with a view to providing an empirical evidence base for the societal discussion about the quality and level of education in the Netherlands. Originally, the surveys were to be held every 5 years. Since the mid-1990s, the frequency has been more variable but the successive studies nevertheless provide a detailed picture of the development in performance level of primary school pupils in four subject areas: Dutch language, numeracy and mathematics, 'world orientation' and English. Here, we shall restrict ourselves to a discussion of the educational achievement of students in Grade 6.

In Dutch language, no marked change in achievement was seen between 1988 and 1998, although there was a slight improvement in written skills between 1993 and 1998. Unfortunately, no data is available for the period after 1998. While data is available for reading skills and comprehension, only very slight changes can be seen, both positive and negative.

It is numeracy and arithmetic in primary education which has drawn fiercest criticism in recent years, with many commentators lamenting the fact that many children seem unable to add up without the aid of a calculator. Twenty-one specific aspects of numeracy were monitored between 1987 and 2004. In 14 aspects, performance remained consistent. The remaining seven aspects show two contradictory trends: an improvement in basic arithmetic (numbers and the relationships between them, percentages, mental arithmetic and estimation). A negative trend was observed in the so-called 'arithmetic processing' skills: addition, subtraction, multiplication and division and problem-solving requiring a combination of these processes. The test questions required students to show their workings and interim results or make use of a standard algorithm. The decline in performance may be due to the fact that most students attempted to solve the problems in their heads rather than on paper.

The domain of 'world orientation' includes four subject areas: history, geography, general science and social awareness/citizenship. No significant changes were seen in the latter two subjects between 1991 and 2002. In geography, a decline in map-reading ability was noted over the period 1995–2001, while scores in other

sub-disciplines such as topography and physical geography remained reasonably constant. In history, a slight worsening of performance was noted in two of the four aspects: ancient history and temporal awareness or 'time-scaling' (which refers to a knowledge of major events and the order in which they happened).

In English at primary school level, there was little alteration in student performance throughout the period 1991–2006 in the areas of aural comprehension, reading and vocabulary.

The overall conclusion to be drawn from the PPON results is that very little change can be seen in the learning performance of Grade 6 pupils over a period of 20 years. Only in numeracy and mathematics was any clear trend observed. Performance in the basic aspects showed a clear improvement, offset by an equally clear decline in 'processing' ability. The PPON reports include expert opinions (contributed by experienced teachers, teacher–trainers and pupil counselling services) with regard to achievement levels. In many cases, these opinions are critical or extremely critical. It is possible that the assessors have set the bar too high. In any event, it is clear that our students do not always achieve the standard that is (tacitly) expected of them.

4.6 Education Inspectorate Reports

The generally positive impression of Dutch education that can be drawn from the international assessments and CITO surveys is confirmed by the findings of the government's own Inspectorate of Education. In 2009, over 90% of the primary and secondary schools visited were adjudged to be of (at least) 'satisfactory' quality. In the case of schools for special education, however, the scores were conspicuously lower: 78% at primary level and 70% at secondary level. The proportion of 'extremely weak' schools at both levels is just over 1%. While the quality of the vast majority of schools is good, and the Inspectorate notes a decrease in the percentage of schools rated as 'weak' or 'extremely weak', the number of students attending one of the substandard schools remains extremely high in absolute terms: some 145,000.

Further research reveals that this situation is nothing new (Inspectorate of Education 2006; Claassen et al. 2008). At the same time, it should be noted that the list of weak schools shows significant turnover. In many cases, the problems are resolved in time. To restore the quality of education to an acceptable level generally calls for intensive efforts over a period of 2–3 years, whereby external support and assistance are essential. The problem of the 'extremely weak' schools would appear to be worse today than it was prior to 2002. While most substandard schools used to be found in the large cities, that is no longer the case. Many smaller schools (with declining student populations) outside the large cities now fail to make the grade, with a notable concentration in the northern part of the country. The extremely weak schools continue to have a greater proportion of students from disadvantaged backgrounds (far higher than the national average) and many such students are of 'native Dutch' background rather than from one of the ethic minorities.

4.7 The Netherlands' Position According to International Education Indicators

The INES project (Indicators of Educational Systems, conducted under the auspices of the OECD) provides relevant international comparative data about educational output, throughput and the number of students failing to complete a full education. The data with regard to early school leaving ('drop-out rates') in Europe is collated by Eurostat. In the case of the Netherlands, this information is drawn from the *Enquête beroepsbevolking* (Working Population Survey; EBB) conducted by Statistics Netherlands (CBS). The INES project also provides a number of financial indicators with regard to the proportion of government expenditure devoted to education and the average cost per student at each educational level. These indicators allow some conclusions to be drawn with regard to the (cost-) efficiency of the Dutch education system. Information relating to the degree of school autonomy can be used to formulate certain hypotheses about the conditions which will promote responsiveness within the education system.

4.7.1 Educational Level (Attainment) of the Dutch Population

Data published by the OECD in 2009 reveals that the educational level (attainment) of the Dutch population is slightly higher than the OECD average. In 2007, some 73% of people aged between 25 and 64 had (at least) a higher secondary education (HAVO or MBO) diploma, compared to the OECD average of 70%. In the 25–34 age group, the figure is even higher: 83% compared to the OECD average of 79%. A similar picture emerges in terms of the proportion of the population who have completed tertiary education: 31% of those aged 25–64 hold a university degree (or equivalent), a figure slightly above the OECD average of 28%. Among the 25–35 age group, 37% of the Dutch population hold a degree, which again is slightly more than the OECD average of 34%. Between 1998 and 2007, the percentage of graduates (aged 25–64) in the Netherlands rose from 24 to 31%, an increase broadly in line with that seen throughout the OECD countries, in which the number of graduates rose from 20 to 27% (see Fig. 4.2).

4.7.2 Early School Leaving

Since the early 1990s, the Dutch government has devoted much attention to reducing early school leaving, i.e., the 'drop-out rate'. Any assessment of the extent of early school leaving, or of the success of efforts to reduce the drop-out rate, is complicated by the poor quality of the available data. Records are incomplete, while interim modification to the data collection systems means that

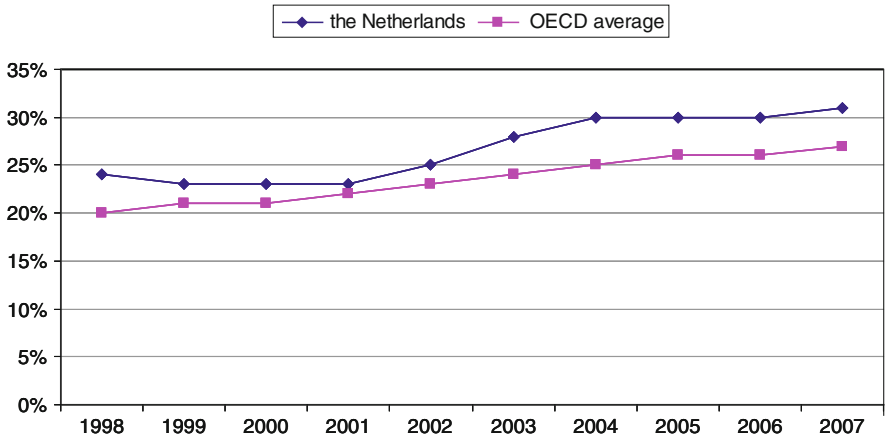

Fig. 4.2 Trends in national educational attainment; percentage of population aged 25–64 with university degree or equivalent

the exact extent of the problem prior to 2005 remains unknown and any comparison over time becomes impossible (Herwijer 2008). The data collected by Eurostat, based on the results of random sample surveys, do however offer a reasonably reliable picture of the trend over a somewhat longer period, i.e., from 2000 to the present day. These data also allow the situation in the Netherlands to be compared to that in 14 other EU member states.

In the Netherlands, an 'early school leaver' is defined as someone who has not gained a basic qualification (school certificate), having failed to complete a course of education at VWO, HAVO or MBO (2) level. At the European level, two indicators are in use: the number of early school leavers in the age group 18–24 (expressed as a percentage of the total age group) and the percentage of persons aged 20–24 who do indeed hold a basic qualification. In the Netherlands, there has been a clear improvement against both indicators since 2000 (see Table 4.4 and

Table 4.4 Trends in early school leaving and possession of basic qualification

	Early school leavers (aged 18–24) (%)	Percentage of persons aged 20–24 in possession of a basic qualification (%)
2000	15.5	71.9
2001	15.3	72.7
2002	15.0	73.1
2003	14.2	75.0
2004	14.0	75.0
2005	13.6	75.6
2006	12.9	74.7
2007	12.0	76.2

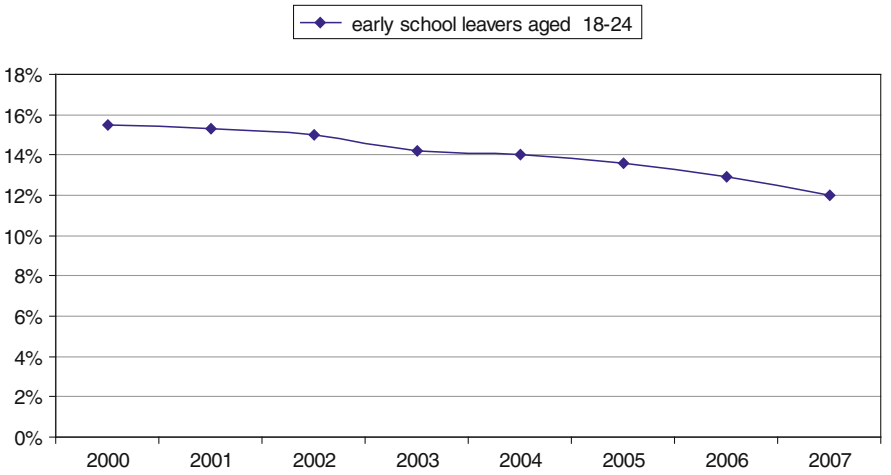

Fig. 4.3 Trend in early school leaving ('drop-out rate'), 2000–2007

Fig. 4.3), but the difference between the actual situation and the target situation (<8% early school leavers and >85% in possession of a basic qualification) remains substantial (Herwijer 2008).

In terms of early school leavers, the Netherlands occupies a position in the middle of the European field. Of the 15 EU member states with which it can be directly compared, six were able to claim a lower drop-out rate in 2006. The trend in the Netherlands shows improvement somewhat above the European average. International comparisons suggest a link between the general level of education in a country and that country's percentage of early school leavers. The higher the educational attainment of parents, the lower the drop-out rate. We may also observe that students in those countries which achieve low rankings in surveys such as PISA, TIMSS and PIRLS are less likely to complete their education. In this respect, the Netherlands shows some divergence from the international trend: despite the high achievement level of our students aged 15 and under, the percentage of early school leavers is not significantly lower than the EU average.

The highest drop-out rate is to be seen in the lower levels (1 and 2) of the MBO track. The likelihood of a student dropping out is partly the product of a number of external factors, such as the home situation and the social environment (particularly in the major cities). Other significant factors include poorly developed basic skills in literacy and numeracy. Here, the deficit which becomes apparent early in the student's school career can be seen to have a long-term effect. There seems to be no link between expansion of scale in the education sector and early school leaving, but a high concentration of ethnic minority students within a school does appear to be a risk factor. Segregation is an issue which has proven difficult to resolve, the problem being more acute in secondary education than in the primary sector.

Table 4.5 Salaries in the Dutch education sector compared to the OECD average (in US$)

	Primary education		Lower secondary education		Higher secondary education	
	NL	OECD	NL	OECD	NL	OECD
Starting level	34,772	28,687	35,516	31,000	35,858	32,183
After 15 years	44,410	39,007	48,818	41,993	63,169	45,513

4.7.3 Financial Investment in Education

A substantial proportion of government expenditure is devoted to education. In 2006, education spending accounted for 12.0% of the Dutch domestic budget (OECD 2009). This figure is lower than the OECD average of 13.3%, although it has risen since 1995, when education accounted for just 9.1% of all public expenditure. The rate of increase during the period 1995–2006 (from 9.1 to 12.0%) is significantly higher than the OECD average for the same period (from 12.0 to 13.3%).

At almost all levels, the cost per student in 2006 was higher than the OECD average. Only in primary education was the cost per student, at $6,425, marginally lower than the average of $6.437. When all levels from primary to tertiary are included in the calculation, the cost per student in the Netherlands is significantly higher than the OECD average ($9,330 against $7,840). NB The international comparison is based on the principle of 'purchasing power parity'.

The main component of education spending is the staffing costs. In the Netherlands, teachers' salaries at both primary and secondary level are higher than the OECD average (see Table 4.5). Once again, the figures have been adjusted according to purchasing power parity.

4.7.4 Working Conditions for Teaching Staff

In this paragraph we consider two important aspects of the working conditions for teaching staff: hours and the student–teacher ratio. In 2007, a fulltime teacher in the Netherlands, whether at primary or secondary level, would have been expected to work 1,639 hours per year. This is largely in line with the OECD averages of 1,662 hours in primary education, 1,652 in lower secondary education and 1656 in higher secondary education. Data relating to actual teaching time in the classroom is available only for the primary sector. Here, the Dutch figure of 930 hours is significantly higher than the OECD average of 798 hours.

The student–teacher ratio in the Netherlands is almost the same at both primary level (15.6–1) and secondary level (15.7–1). The ratio in primary education is slightly lower than the OECD average of 16.0. However, in secondary education the ratio is significantly higher than the OECD average of 13.0–1.

It must be remembered that the student–teacher ratio is not the only factor which determines class sizes. Other relevant factors include the number of classes

for which a particular teacher is responsible, the instruction time as a proportion of the working day and the percentage of a teacher's total working time devoted to teaching. The average class size can therefore differ greatly between two countries with exactly the same teacher–student ratio.

4.7.5 School Autonomy

The report *Education at a Glance 2008* (OECD 2008) presents data indicating the degree to which schools are able to make autonomous decisions. The data specifically refers to secondary education in 23 OECD countries. The researchers selected a broad range of aspects about which decisions must be made and examined the level at which those decisions are taken, e.g., school, local, sub-regional, regional, state or national level. The decisions examined fall into four categories: organisation (e.g., student admissions, choice of course material, timetabling, teaching methods), personnel management (e.g., 'hiring and firing', salaries), planning and structure (e.g., opening or closing locations, the choice of subjects to be offered at a particular location) and the use of resources (including financial management). Where decisions are taken at the school level, the report further specifies whether the school enjoys complete autonomy or whether it must also consult some higher administrative level.

The Netherlands, like the United Kingdom, emerges as a country in which almost all important decisions are taken at the school level. Over 94% of all matters are decided by the school itself. In terms of the use of resources, as well as in planning and structure, all decisions are taken at the school level, while 88% of decisions relating to personnel management are made at this level. In no other country are these percentages so high. In terms of the organisation of instruction, 89% of relevant decisions are taken by the school itself. There are three OECD countries—the United Kingdom, Hungary and New Zealand—in which the percentages for this aspect are higher. Ten countries have precisely the same degree of autonomy in this respect as the Netherlands, while nine have less autonomy.

Where decisions are taken at school level in the Netherlands, the school generally enjoys complete autonomy and is not required to refer (or defer) to any higher authority. This is certainly true in the case of the organisation of instruction, personnel management and the use of resources. Here too, the Netherlands has the highest rate of school autonomy of all OECD countries. In terms of planning and structure, the schools' scope for decision-making is restricted by legislation and policy frameworks.

A comparison for the period 2003–2007 shows that almost half of the countries examined adopted some degree of centralised decision-making. This trend was even more marked during the period 1998–2003. Between 2003 and 2007, the Netherlands showed a very slight decrease in decentralised decision-making but nevertheless remained a clear frontrunner in terms of school autonomy.

4.8 Education in the Netherlands by Equity Indicators

This section examines the situation within the Dutch education sector based on a number of 'equity indicators'. The main focus is on the influence of socio-economic and ethnic background on educational achievement and overall attainment. We shall also examine the differences between schools in terms of both educational output and the social background of their student bodies. The international position of the Netherlands is discussed with particular reference to the age at which students are assigned to a particular type of secondary education. Finally, we examine the changes which have taken place in the Netherlands since the 1990s, in terms of the correlation between student background and educational achievement and in terms of segregation and stratification within the education system.

4.8.1 Ethnic Background and Educational Achievement in International Comparative Studies

The report of the PISA 2006 study (OECD 2007a, b) reveals that Dutch students born in another country or with one or both parents from another country, show a relatively high educational deficit compared to their 'indigenous' Dutch counterparts. Learning achievement in all three key areas (literacy, numeracy and general science) is markedly lower among the ethnic minority communities in the Netherlands and is also significantly lower than the OECD average. It is also notable that second generation migrants (born in the Netherlands) perform no better than first generation migrants (born elsewhere). In fact, the educational deficit of the first generation migrants noted by PISA 2006 is slightly smaller than that of the second generation, although the difference is not statistically significant (Table 4.6).

4.8.2 Socio-Economic and Cultural Background as a Determinant of Learning Achievement

The PISA reports devote particularly close attention to the relationship between learning achievement and attainment on the one hand and the background of students on the other. An empirical instrument has been developed especially for

Table 4.6 Educational deficit of migrants (first and second generation), expressed as points on the PISA scales

	Second generation		First generation	
	NL	OECD	NL	OECD
General science	79	55	68	58
Reading skills	61	42	65	54
Mathematics	66	45	58	49

the PISA studies which can assess the economic, social and cultural status of a student's family: the ESCS index. The indicator is based on the professional and educational level of the student's parents and the presence of certain types of possession in the home. In the PISA 2006 report, the correlation between scores on the ESCS index and the educational performance of 15-year-old Dutch students is shown to be slightly stronger than the OECD average in all three key subject areas. The assessment scores achieved by Dutch students whose ESCS index score is one standard deviation above the international average are 44 above average for general science, 40 higher for literacy and reading skills, and 39 points higher for numeracy and mathematics. This is slightly higher than the OECD averages of 40, 38 and 38, respectively. For general science, PISA 2006 reports the effect of economic, social and cultural status at two distinct levels: within schools and between schools. In the Netherlands, the effect within schools is indexed at 11, which is far below the OECD average of 64). Among students at the same school, the effect of background on learning performance is therefore extremely small. The correlation between the ESCS index score and learning performance in Dutch secondary education is largely due to the differences between schools. At this level the effect (of individual ESCS scores and the school average) is 123, which is far higher than the OECD average of 21. This is hardly surprising given that students in the Netherlands are streamed into various types of secondary education at the age of 12. This process is based on their educational achievement to date, but given the correlation between performance and socio-economic background this (early) selection results in marked differences between schools in terms of the background of their students.

The same effect can be seen when we examine the percentages indicating variance at school and student level. The *total* explained variance in learning performance is slightly higher than the OECD average in all three key subject areas (see Table 4.7). If we then distinguish between the variance within and between schools which is explained by the ESCS index, the Netherlands' percentages are extremely low in terms of the variance within schools. The correlation between ESCS index score and learning achievement is largely due to the differences *between* schools. When the variance in learning achievement in the three key areas are subjected to dual-level analysis based on a school component and a student component, the school variance in the Netherlands is particularly high: 59% for science, 60% for literacy and 63% for numeracy and mathematics. PISA 2006 reports higher percentages for only two countries: Hungary and Germany.

Table 4.7 Variance in learning achievement as explained by the Economic, Social and Cultural Status Index (PISA 2006)

	Total		Between schools		Within schools	
	NL (%)	OECD (%)	NL (%)	OECD (%)	NL (%)	OECD (%)
General science	16.7	14.4	41.1	20.5	0.8	3.8
Reading skills	13.7	12.3	34.8	21.5	0.3	2.7
Mathematics	15.5	14.4	37.6	21.9	0.5	3.4

The countries which come just below the Netherlands on this ranking are the Czech Republic and Austria. In terms of the ESCS index, the percentage of school variance in the Netherlands is not particularly high. It is 22%, which is just below the OECD average and lower than that of countries such as Australia and the United States, where students are not streamed into different types of education until the age of 16.

Luyten (2008) reports the correlation between reading skills and the number of books in the student's home, further to PIRLS 2001 (primary Group 6) and PISA 2003 (15-year-olds). The correlations for the Netherlands (0.23 in PIRLS; 0.41 in PISA) are compared to those of the other 17 countries taking part in both studies. A distinction is drawn between those countries with early selection in secondary education (prior to the age of 14) and those in which students are streamed into various types of education at the age of 14 or above. In all countries, the correlation between reading skills and the number of books at home is stronger in the case of the 15-year-old students. In those countries with early selection, the correlation in primary education is already slightly higher (0.29) than in the other countries (0.24), but the difference is more marked in secondary education: 0.39 against 0.32. The increase in correlation is greater in countries with early selection (0.105) than in those which do not apply early selection (0.079). In the case of the Netherlands, the correlation in primary education is relatively low (0.23), but in secondary education is higher (at 0.41) than the average for countries with early selection.

A similar analysis has been conducted (with respect to mathematics and general science only) in all 25 countries that took part in TIMSS 2003 at both primary and secondary level. Here, the analysis is not based on the correlation between learning performance and the number of books in the home situation, but on the difference in performance between students with many books at home ('many' being defined as 101 or more books) and those with few books (11–25). The difference between primary level students was revealed to be slightly lower in countries with early selection than those without: 26.9 vs. 31.5 for mathematics; 25.0 vs. 29.4 for general science. Among secondary students, the situation is reversed. Here, the difference is greater in those countries which do apply early selection: (43.9 vs. 39.2 for mathematics and 42.9 vs. 36.3 for science).

The general picture with respect to countries with early selection is even more apparent in the Netherlands. In the primary sector, the difference between students with many books and those with few books at home is even smaller than in those countries with early selection (25 for mathematics and 18 for general science), but are far greater in the case of secondary school students (54 for mathematics and 48 for science). The rate of increase in the difference is also far higher in the Netherlands than the average for countries with early selection (Luyten 2008).

A secondary analysis based on the data of PISA 2006 and examining students who perform well despite a disadvantaged background (termed 'resilient' students) reveals a reasonably positive picture in the Netherlands (OECD 2010). The percentage of resilient students in the Netherlands is 14.8%, compared to the OECD average of 13.1%. The Netherlands is therefore in eighth place among the 30

OECD countries. In the European Union, only Finland, Estonia and Portugal have a higher percentage. A student is classified as 'resilient' if he or she is among the lowest 33% in terms of socio-economic and cultural status but among the 33% highest achieving students internationally. The figures cited here are based on the assessment scores for general science only. However, analyses based on the scores for reading and numeracy produce very similar results.

4.8.3 The Age at Which Students are Assigned to a Particular Type of Secondary Education

The Netherlands streams students into a particular type of secondary education at the age of 12 which, in comparison to most other countries, is on the early side. Further to their research into the effects of early selection on learning performance and inequity, Hanushek and Woessmann (2005) examined 59 national education systems, identifying the age at which selection takes place. They divide countries into three categories: those which have selection before the age of 14, those with selection at the age of 14 and those which do not select until the age of 15 or above. In 16 countries (approximately one-third) students face selection prior to the age of 14, and in 26 countries (just under half) selection takes place at or after the age of 15 (See Table 4.8).

Viewed in the international context, there is a clear link between the socio-economic heterogeneity of school populations in secondary education and early selection. That heterogeneity is greater in countries which do not have early selection. However, of all the countries that do apply early selection, the Netherlands has one of the highest rates of heterogeneity (Luyten 2008).

A review of the international literature reveals that early selection (at the age of 14 or below), leads to a higher variation of learning achievement and attainment in secondary education. Education systems which apply early selection show greater variation than the more comprehensive systems. This effect becomes clear when controlled against the variation in primary education (Hanushek and Woessmann 2005). Although the Netherlands falls within this international pattern, it should be noted that the country has a very low variation in learning achievement at both primary and secondary levels, when compared to the majority of countries (Luyten 2008).

Moreover, analysis of international datasets such as TIMSS, PIRLS and PISA reveals that education systems with early selection show an increase in the correlation between social, economic and cultural background and learning performance at secondary level, compared to that at primary level. In the Netherlands, this increase in 'inequity' is even greater than in other countries which apply early selection (Luyten 2008). However, it should be noted that research into trends in equal opportunity throughout the school career shows that inequity generally manifests itself at an early stage of primary education (Mulder et al. 2005).

Table 4.8 Age at which first selection is applied in 59 countries

Countries in which students have not yet been selected at the age of 15 (26)	Countries in which students are selected at the age of 14 (14)	Countries in which students are selected prior to the age of 14 (16)
Argentina	Armenia	Austria
Australia	Cyprus	Belgium
Brazil	France	Bulgaria
Canada	Greece	Chile
Colombia	Indonesia	Czech Republic
Denmark	Macedonia	Germany
Finland	Poland	Italy
Hong Kong	Portugal	Korea
Iceland	Romania	Liechtenstein
Iran	Russia	Lithuania
Japan	Slovenia	Luxembourg
Jordan	Taiwan	Mexico
Kuwait	South Africa	*Netherlands*
Latvia	Switzerland	Philippines
Malaysia		Singapore
Morocco		Slovakia
Moldavia		
New Zealand		
Norway		
Spain		
Sweden		
Thailand		
Tunisia		
Turkey		
United Kingdom		
United States		

Adapted from Hanushek and Woessmann (2005)

4.8.4 Trends in Educational Deficit and the Position of Minority Groups

The reduction of educational deficits has been high on the political agenda since the 1970s. A key aim has been to improve opportunities for those children whose circumstances stand in the way of a successful school career. Since 1988, a number of cohort studies (LEO, PRIMA, VOCL, COOL$^{5-18}$) have been conducted to monitor the effects of government policy in this regard. The main objective of these studies has been to quantify educational achievement and attainment on the part of (disadvantaged) students in both primary and secondary education. The term 'disadvantaged' refers to a student whose parents have a 'low level' of education, regardless of ethnic background. The criteria have been subject to refinement over time, whereupon in this chapter we apply the definition of a student, neither of whose parents has gained any educational qualification higher

than a basic vocational diploma (LBO, VBO, VMBO). We further distinguish between disadvantaged students from an indigenous Dutch background (demographic classification 1.25) and those of an ethnic minority background (1.90). Accordingly, a student from an ethnic background is not automatically regarded as 'disadvantaged', although the educational level of ethnic minority parents is in general somewhat lower than that of Dutch parents. We examine the position of ethnic minorities in the Dutch education system in greater detail below. This section considers trends in the position of all disadvantaged students.

The cohort studies have shown a rise in educational achievement and attainment among all student groups, i.e., both those classified as 'disadvantaged' and others. Accordingly, the relative position of the disadvantaged students has not changed to any significant degree. Among the disadvantaged students from the ethnic minorities, progress is limited whereupon their relative position has actually worsened slightly. In terms of numeracy skills, however, the difference between ethnic students and others has been negated (Mulder et al. 2005).

In terms of school career beyond primary education, there has been very little change in the relative position of the disadvantaged students. Although the percentage of disadvantaged students selected for the academic (HAVO/VWO) tracks has risen, so has the overall number of students admitted. At the other end of the spectrum, we see a striking rise in the number of disadvantaged students for whom remedial individual education (VMBO-PRO and IWOO) is recommended. This increase is seen among both ethnic minority and Dutch students.

The language deficit of ethnic minority students when starting primary school goes some way towards explaining their less favourable position in the latter stages of secondary education. In the case of the Dutch students, other factors are involved. Their overall educational deficit generally increases once admitted to secondary education. On completing secondary education, their deficit is therefore greater than that of other students with a similar starting position at the end of primary education. Dutch students are frequently streamed into lower tracks even when their achievement level is equal to that of the ethnic students.

4.8.5 Position of Ethnic Minority Students in Dutch Education

The foregoing paragraph discusses the position of *disadvantaged* students, regardless of ethnic origin, within the Dutch education system. It notes that no major shift has been seen in the position of these students. This paragraph considers the position of all ethnic minority students, regardless of whether they are classified as 'disadvantaged'. Here, a significant trend can be seen from the late 1990s onwards: a higher level of educational achievement and attainment on the part of ethnic minority parents. While it was previously exceptional for Turkish or Moroccan parents to have qualifications above the basic vocational (LBO) level, this is no longer the case. As a result, a far higher proportion of ethnic minority students can no longer be classified as 'disadvantaged' using the criteria cited

Table 4.9 Development in the educational attainment of Turkish parents, 1994–2007

Highest qualification		Primary education (LO) (%)	Lower vocational education (LBO) (%)	Higher secondary (vocational) education (MBO) (%)	Tertiary education (HBO/university) (%)
Fathers	1994	67.7	24.2	6.8	1.2
	2000	49.8	28.5	15.7	6.0
	2007	44.5	29.4	19.5	6.7
Mothers	1994	84.5	11.6	3.9	0.0
	2000	75.3	15.4	5.2	4.1
	2007	67.0	16.2	14.2	2.7

Table 4.10 Development in educational attainment of Moroccan parents, 1994–2007

Highest qualification		Primary education (LO) (%)	Lower vocational education (LBO) (%)	Higher secondary (vocational) education (MBO) (%)	Tertiary education (HBO/university) (%)
Fathers	1994	82.8	13.8	2.6	0.9
	2000	75.3	15.4	5.2	4.1
	2007	57.3	21.0	14.9	6.8
Mothers	1994	93.5	6.5	0.0	0.0
	2000	85.2	8.9	5.6	0.4
	2007	61.4	15.6	15.3	7.8

above. The trend in the educational level of Turkish and Moroccan parents over the period 1994–2007 is shown in Tables 4.9 and 4.10, and illustrated as a graph in Figs. 4.4 and 4.5. A slow but steady improvement can be seen among the Turkish and Moroccan communities, although their educational level still remains lower than that of the indigenous Dutch population. The improvement is largely due to the fact that second generation migrants have completed their entire education in the Netherlands (Gijsberts and Herwijer 2009).

Table 4.11 shows the development in educational attainment on the part of Dutch fathers and mothers. Here too, we may note a significant upward trend. The number of Dutch students classified as 'disadvantaged' has therefore fallen accordingly.

The Annual Report on Integration 2009, published by the Netherlands Institute for Social Research, reveals that the language deficit of ethnic students when beginning their school career remains large but is gradually decreasing (Gijsberts and Herwijer 2009). Attendance at pre-school playgroups by Turkish and Moroccan children has shown a marked increase over the past decade (see Table 4.12 and Fig. 4.6).

The language skills of Turkish and Moroccan students have also improved over time, although there is still a deficit of approximately 2 years compared to Dutch students at the end of primary education. The improvement of the ethnic students in numeracy and mathematics is somewhat greater, whereupon the deficit was

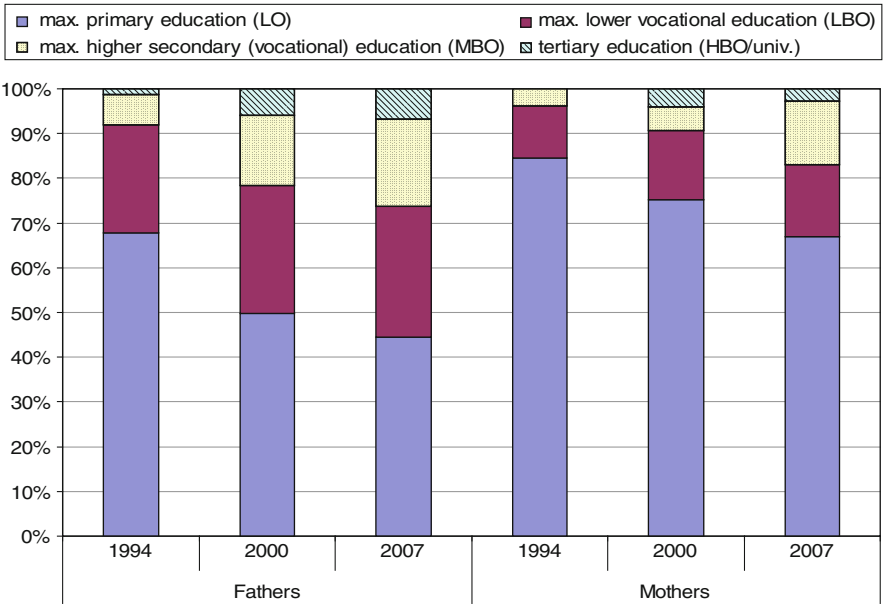

Fig. 4.4 Development in the educational attainment of Turkish parents, 1994–2007

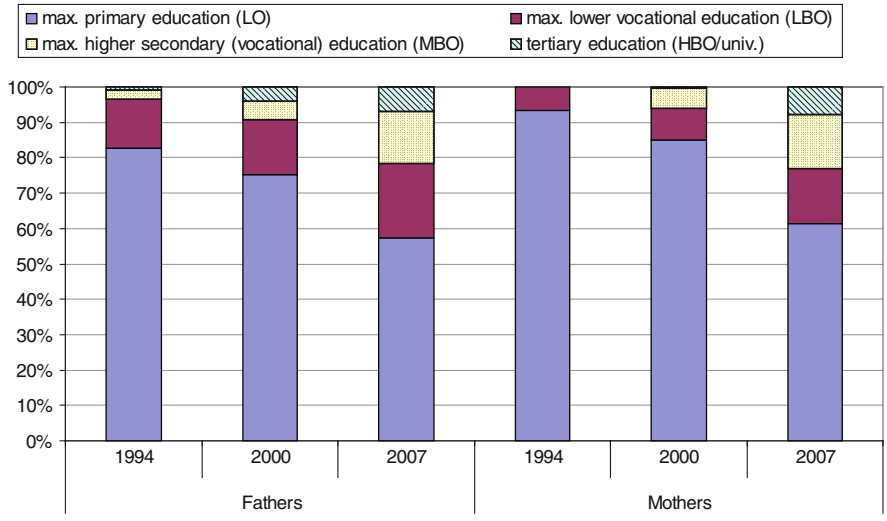

Fig. 4.5 Development in educational attainment of Moroccan parents, 1994–2007

halved during the 1995–2008 period. The overall improvement in learning performance has resulted in higher scores in the CITO assessments (see Table 4.13 and Fig. 4.7). Because there has been a slight decline in performance on the part of

Table 4.11 Development in educational attainment of Dutch parents, 1994–2007

Highest qualification:		Primary education (LO) (%)	Lower vocational education (LBO) (%)	Higher secondary (vocational) education (MBO) (%)	Tertiary education (HBO/university) (%)
Fathers	1994	5.5	43.6	29.9	21.0
	2000	3.2	37.9	33.2	25.7
	2007	2.4	30.5	39.2	28.0
Mothers	1994	5.8	46.6	34.5	13.2
	2000	3.3	38.1	40.1	18.4
	2007	1.9	26.7	49.5	21.9

Source Prima (1994), PRIMA (2000) and COOL (2007) (secondary analyses)

Table 4.12 Attendance at pre-school playgroups, by ethnic origin

	Turkish (%)	Moroccan (%)	Surinamese/ antillean (%)	Dutch (disadvantaged) (%)	Dutch (others) (%)
1997	46	25	63	79	81
1999	59	38	65	79	82
2001	67	39	71	83	80
2003	75	51	63	83	79
2005	75	52	61	80	76
2008	83	70	64	84	73

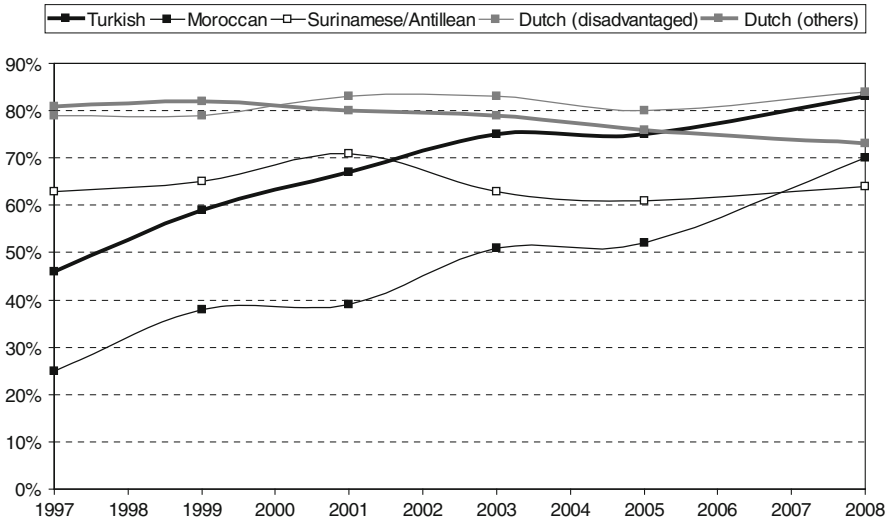

Fig. 4.6 Attendance at pre-school playgroups by ethnic origin

indigenous Dutch students, the deficit of the ethnic minority students showed a marked decrease between 1995 and 2008. The difference between Moroccan students and their Dutch counterparts (excluding 'disadvantaged' students) fell

from 12.9 to 7.1 points. The improved scores in the CITO assessments have resulted in more students being recommended for the higher forms of secondary education. In 2008, just over 20% of Turkish and Moroccan students were advised to enter the HAVO/VWO tracks. However, the number of Turkish and Moroccan students in these academic tracks remains significantly lower than that of Dutch students, of whom almost 50% are admitted to the HAVO or VWO track (see Fig. 4.8). Students of Surinamese or Antillean origins occupy a position between these extremes. Overall, the secondary school career of ethnic students is somewhat less straightforward than that of their Dutch counterparts. They are more likely to be required to repeat a year and their examination pass rate is lower.

The majority of ethnic minority students qualify for the employment market via the MBO track. They are more often to be found in the lower levels of MBO education, although the number of Turkish and Moroccan students progressing to the higher levels also showed an upwards trend between 2005 and 2008. During

Table 4.13 Average total score in CITO assessments, by ethnic origin and (school) year

	Turkish	Moroccan	Surinamese	Dutch (disadvantaged)	Dutch (others)
1995	524.1	525.1	527.1	531.9	538.0
1997	525.2	526.4	527.4	531.2	537.4
1999	526.9	526.9	529.2	530.6	536.9
2001	527.3	527.4	529.8	530.5	537.3
2003	527.9	528.3	529.9	531.0	537.4
2005	527.0	527.7	527.9	528.9	536.2
2008	527.0	529.1	529.1	529.2	536.2

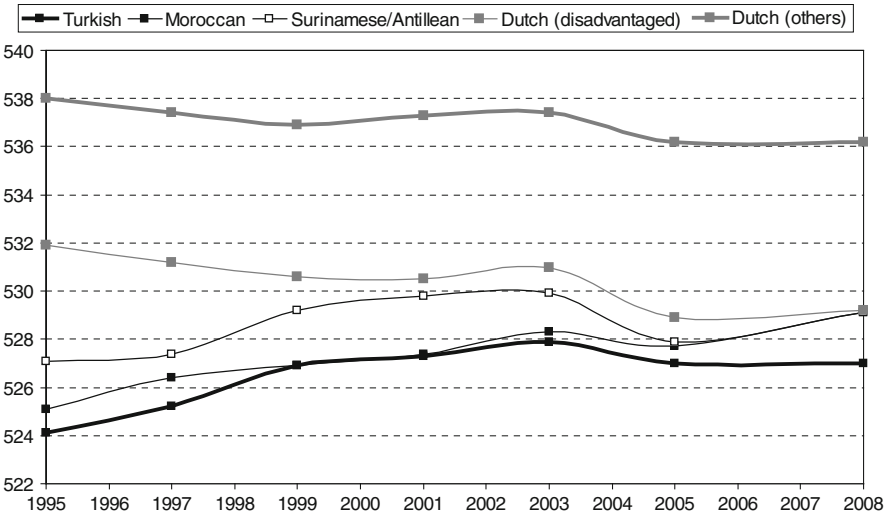

Fig. 4.7 Average total score in CITO assessments, by ethnic origin and (school) year

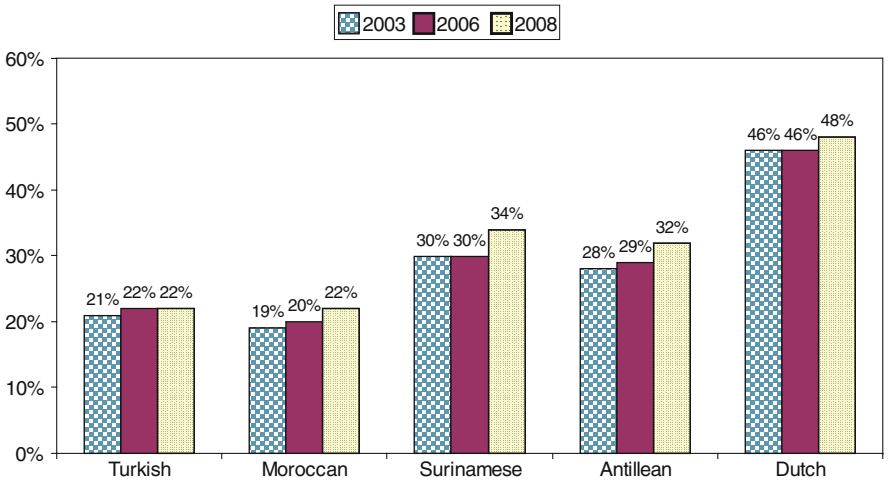

Fig. 4.8 Ethnic origins of year 3 HAVO/VWO students

Table 4.14 Early school leavers (from MBO track) by ethnic origin

	Turkish (%)	Moroccan (%)	Surinamese (%)	Antillean (%)	Dutch (%)
2005	18.6	17.7	19.5	20.1	11.7
2006	15.5	15.7	16.5	17.0	10.0
2007	14.7	15.9	15.6	17.4	9.6
2008	13.5	15.8	15.7	17.7	9.4

the same period, there was a decline in the number of early school leavers among all categories of student, although the percentage of early leavers among the ethnic groups remains higher than that of other students (see Table 4.14 and Fig. 4.9).

The number of ethnic students entering higher education has shown a marked rise since the mid-1990s. In the case of Turkish and Moroccan students, enrolments have doubled, while there has also been a significant increase in the number of students of Surinamese origin. As a result, the disparity between the ethnic minorities and indigenous Dutch students has been greatly reduced. Almost half of the Dutch students entering the HBO track do so as a continuation of MBO education. Among the ethnic students, this throughput is less common: the majority of HBO entrants have previously been in the HAVO/VWO tracks. As in MBO, the school career of ethnic students is likely to be less straightforward. There is a higher drop-out rate and it generally takes students longer to complete the course successfully.

In the large cities, the majority of primary school students have an ethnic minority background. In the 2006/2007 school year, ethnic minority students made up over 80% of the student body in some 40% of primary schools in Amsterdam and Rotterdam. Despite various initiatives intended to achieve a better balance, this segregation has yet to be resolved. A similar situation exists in secondary schools

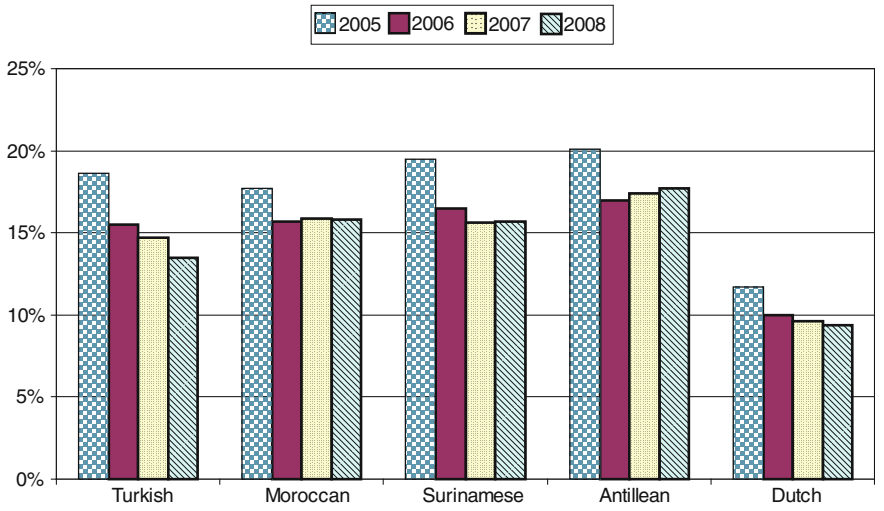

Fig. 4.9 Early school leavers (from MBO track) by ethnic origin

(Gijsberts and Herwijer 2009). Reducing segregation is frequently regarded as a worthy aim in its own right. At the end of secondary education, the educational position of students who had previously attended primary schools with a high proportion of ethnic students is generally slightly lower, even when allowances are made for learning ability, track recommendations and individual background characteristics (Mulder et al. 2005). Moreover, a high concentration of ethnic students would seem to be a risk factor in early school leaving (Herwijer 2008).

4.9 Conclusions

4.9.1 Educational Achievement and Attainment

In international comparisons, Dutch students generally score above average. The Netherlands achieves a slightly lower position on global rankings due to the exceptionally high scores of countries such as Japan, Singapore, Korea and Taiwan. When considering trends over time, it is inappropriate to state that there has been any clear decline in educational achievement in the Netherlands, although neither has there been any visible improvement. Insofar as there has been any decline, it may be seen in both primary and secondary education. Recent criticism of the quality of education has primarily been directed at the further education sector, but here too we see no statistically significant evidence of any worsening in performance (see Table 4.2). In the primary sector, the main criticism relates to numeracy skills, although the data also suggests a slight decline in literacy and reading ability.

The indications of a decline in educational performance offered by the international surveys are not confirmed by the more detailed national surveys (PPON) conducted by CITO since 1987. Only in the domain of numeracy and mathematics can any clear development be observed. Performance in the basic areas has actually shown a definite improvement, but this is offset by an equally negative trend in terms of the 'processing' tasks. In interpreting this information, it should be remembered that fewer students are now referred to special (remedial) education, while the total number of students has increased.

The reasonably positive picture of Dutch education offered by the international assessments and CITO studies is confirmed by the findings of the Education Inspectorate (*Onderwijsverslag* 2008/2009). Just over 1% of schools, at both primary and secondary level, are now deemed to be 'extremely weak'.

4.9.2 Educational Level (Attainment)

Although the Netherlands is among the world leaders in terms of educational achievement, a rather different picture emerges in terms of educational *attainment*, as represented by the highest level of qualification obtained by individuals. Data published by the OECD (*Education at a Glance 2009*) reveals that the educational level of the Dutch population is only very slightly higher than the OECD average. During the period from 1998 to 2007, the number of people aged 25–64 holding a degree (or equivalent) rose from 24 to 31%. The rise is in line with that seen in all OECD countries (as illustrated in Fig. 4.2). Excellent performance in terms of educational achievement is therefore not matched by that in educational attainment.

4.9.3 Early School Leaving

Since 2000, the number of students who fail to complete their education has continued to decline but there is still a significant difference between the actual 'drop-out rate' and the target level. In this respect, the Netherlands can be seen to be performing better than the European average but it is still far from the top of the European rankings.

4.9.4 Public Spending on Education

A significant proportion of government spending is devoted to education. The proportion of the Dutch national budget spent on education (12.0% in 2006; *Education at a Glance, 2009*) remains below the OECD average, although there was an above-average increase during the period from 1995 to 2006. In 2007, the

cost per student was above the OECD average in all sectors except primary education, in which the cost per student in the Netherlands ($6,425) was fractionally lower than the OECD average of $6.437. The main component of education spending is staff salaries. In the Netherlands, teachers' salaries are higher than the OECD average at both primary and secondary levels.

4.9.5 Equity

4.9.5.1 The Position of Ethnic Minority Students

PISA 2006 reveals that the educational deficit of ethnic minority students in the Netherlands is noticeably greater than the OECD average. Another significant finding is that second generation migrants (who were born in the Netherlands) do not perform any better than first generation migrants (born elsewhere). Further analysis shows that the educational achievement and attainment of the ethnic minorities in the Netherlands are showing slow but steady improvement. This is particularly true of the Turkish and Moroccan communities, although their overall educational level remains below that of the 'native' Dutch population. The improvement is largely due to the fact that second generation migrants have been able to complete their full education in the Netherlands.

The numeracy and literacy skills of ethnic minority primary school students show an ongoing improvement and more ethnic students are now being admitted to the academic secondary education tracks (HAVO/VWO). There has also been a marked increase in the number of ethnic students entering further education. (Admissions of Turkish and Moroccan students have doubled, while those of students with a Surinamese background have also shown a significant rise.)

Between 2005 and 2008, the percentage of early school leavers showed a downward trend in all student groups, although ethnic students remain more likely to 'drop out' than their Dutch counterparts. A situation that has proven particularly difficult to resolve is the high concentration of ethnic minority students in some schools in the large cities. During the 2006/2007 school year, ethnic minority students made up over 80% of the student body in some 40% of primary schools in Amsterdam and Rotterdam.

4.9.5.2 The Degree to Which Learning Achievement and Attainment are Influenced by Socio-Economic and Cultural Background

A further indicator of equity (or inequity) is the degree to which educational achievement and attainment are influenced by the student's social, economic and cultural background. Again, the PISA data suggests that the Netherlands fares

slightly worse than the OECD average in this respect. Luyten (2008) uses the number of books at home as an indicator of 'cultural capital' and concludes that achievement at primary school level in the Netherlands (based on PIRLS data) is indeed influenced by the number of books in the home situation (a correlation of .23), and even more so in secondary education (based on PISA data), with a correlation of .41.

4.9.5.3 Variance of Learning Achievement

A third indicator of equity is the variance in learning achievement between students at the same school and between schools. The PISA data shows relatively minor variance in student performance within the same school but exceptionally high variance (approximately 60%) between schools. This is likely to be a product of the extremely stratified and segregated secondary education system in the Netherlands. Given the stratification of secondary education, another striking finding is that variance between schools on the index for socio-economic status is relatively low and slightly below the OECD average. In fact, the situation in the Netherlands is better than in some countries with a more comprehensive system.

Educational equity has many facets. Although international studies suggest that average learning achievement and equity are higher in countries which do not have a stratified education system, the Netherlands continues to perform relatively well in this respect, particularly if we also consider the influence of the individual student's socio-economic background.

References

Beaton, A. E., Martin, M. O., Mullis, I. V. S., Gonzales, E. J., Kelly, D. L., & Smith, T. A. (1996a). *Science achievement in the middle school years, IEA's Third International Mathematics and Science Study*. Chestnut Hill, MA: The International Association for the Evaluation of Educational Achievement (IEA).

Beaton, A. E., Mullis, I. V. S., Martin, M. O., Gonzales, E. J., Kelly, D. L., & Smith, T. A. (1996b). *Mathematics achievement in the middle school years, IEA's Third International Mathematics and Science Study*. Chestnut Hill, MA: The International Association for the Evaluation of Educational Achievement (IEA).

Claassen, A., Hulshof, M., Kuijk, J., van Knipping, C., Koopmans, A., & Vierke, H. (2008). *De Beleidscontext van Zwakpresterende Scholen*. Nijmegen: ITS.

Gijsberts, M., & Herwijer, L. (2009). Onderwijs en Opleidingsniveau. In M. Gijsberts en J. Dagevos (red.). *Jaarrapport Integratie 2009*. Den Haag: Sociaal en Cultureel Planbureau.

Hanushek, E., & Woessmann, L. (2005). *Does educational tracking affect performance and inequality? Differences-in-differences evidence across countries*. Retrieved from www.CESifo.de

Herwijer, L. (2008). *Gestruikeld voor de Start. De school verlaten zonder Startkwalificatie*. Den Haag: Sociaal en Cultureel Planbureau.

Inspectorate of Education. (2006). *Ontstaan en Ontwikkeling Zeer Zwakke Scholen in het Basisonderwijs*. Utrecht: Author.

Inspectorate of Education. (2009). *De Staat van het Onderwijs, Onderwijsverslag 2008/2009*. Utrecht: Author.

Knecht-Van Eekelen, A., Gille, E., & Van Rijn, P. (2007). *Resultaten PISA-2006, Praktische Kennis en Vaardigheden van 15-jarigen, Nederlandse Uitkomsten van het OECD Programme for International Student Assessment (PISA) op het Gebied van Natuurwetenschappen, Leesvaardigheid en Wiskunde in het Jaar 2006*. Arnhem: CITO.

Luyten, H. (2008). *Empirische Evidentie voor Effecten van vroegtijdige Selectie in het Onderwijs, Literatuurstudie in Opdracht van het Ministerie van OCW*. Enschede: Universiteit Twente, Faculteit Gedragswetenschappen.

Martin, M. O., Mullis, I. V. S., Beaton, A. E., Gonzales, E. J., Smith, T. A., & Kelly, D. (1997). *Science achievement in the primary school years: IEA's Third International Mathematics and Science Study (TIMSS)*. Chestnut Hill: TIMSS International Study Center, Boston College.

Martin, M. O., Mullis, I. V. S., & Foy, P. (2008). *TIMSS 2007 international report, findings from IEA's Trends in International Mathematics and Science Study at the fourth and eighth grades*. Boston: TIMSS & PIRLS International Study Center.

Martin, M. O., Mullis, I. V. S., Gonzales, E. J., & Chrostowski, S. J. (2004). *TIMSS 2003 international science report; findings from IEA's Trends in International Mathematics and Science Study at the fourth and eighth grades*. Boston: TIMSS & PIRLS International Study Center.

Martin, M. O., Mullis, I. V. S., Gonzales, E. J., Gregory, K. D., Smith, T. A., Chrostowski, S. J., et al. (2000). *TIMSS 1999 international science report; findings from IEA's repeat of the Third International Mathematics and Science Study at the eighth grade*. Boston: The International Association for the Evaluation of Educational Achievement (IEA).

Mulder, L., Roeleveld, J., Veen, I., & van der Vierke, H. (2005). *Onderwijsachterstanden tussen 1988 en 2002, Ontwikkelingen in Basis- en Voortgezet Onderwijs*. Nijmegen: ITS/SCO-Kohnstamm Instituut.

Mullis, I. V. S., Martin, M. O., Beaton, A. E., Gonzales, E. J., Kelly, D., & Smith, T. A. (1997). *Mathematics achievement in the primary school years: IEA's Third International Mathematics and Science Study (TIMSS)*. Chestnut Hill: TIMSS International Study Center, Boston College.

Mullis, I. V. S., Martin, M. O., & Foy, P. (2008). *TIMSS 2007 international mathematics report; findings from IEA's Trends in International Mathematics and Science Study at the fourth and eighth grades*. Boston: TIMSS & PIRLS International Study Center.

Mullis, I. V. S., Martin, M. O., Gonzales, E. J., & Chrostowski, S. J. (2004). *TIMSS 2003 international mathematics report; findings from IEA's Trends in International Mathematics and Science Study at the fourth and eighth grades*. Boston: TIMSS & PIRLS International Study Center.

Mullis, I. V. S., Martin, M. O., Gonzales, E. J., Gregory, K. D., Garden, R. A., O'Connor, K. M., et al. (2000). *TIMSS 1999 international mathematics report; findings from IEA's repeat of the Third International Mathematics and Science Study at the eighth grade*. Boston: The International Association for the Evaluation of Educational Achievement (IEA).

Mullis, I. V. S., Martin, M. O., Gonzalez, E. J., & Kennedy, A. M. (2003). *PIRLS 2001 international report*. Boston: International Study Center.

Mullis, I. V. S., Martin, M. O., Kennedy, A. M., & Foy, P. (2007). *PIRLS 2006 international report*. Boston: International Study Center.

OECD. (2001). *Knowledge and skills for life, first results from the OECD programme for international student assessment (PISA 2000)*. Paris: Author.

OECD. (2004a). *Learning for tomorrow's world, first results from PISA 2003*. Paris: Author.

OECD. (2004b). *Problem solving for tomorrow's world, first measures of cross-curricular competencies from PISA 2003*. Paris: Author.

OECD. (2007a). *PISA 2006, science competencies for tomorrow's world, volume 1: Analysis*. Paris: Author.

OECD. (2007b). *PISA 2006, volume 2: Data/Données*. Paris: Author.

OECD. (2008). *Education at a glance 2008, OECD indicators*. Paris: Author.

OECD. (2009). *Education at a glance 2009, OECD indicators*. Paris: Author.

OECD. (2010). *Against the odds, disadvantaged students that succeed at school*. Paris: Author.

Rindermann, H. (2007). The *g*-factor of international cognitive ability comparisons: The homogeneity of results in PISA, TIMSS, PIRLS and IQ-tests across nations. *European Journal of Personality, 21*, 667–706.

van der Schoot, F. (2008). *Onderwijs op Peil? Een Samenvattend Overzicht van 20 Jaar PPON*. Arnhem: CITO.

Wijnstra, J. M. (2001). *Bruikbare Kennis en Vaardigheden voor Jonge Mensen, Nederlandse Uitkomsten van het OECD Programme for International Student Assessment (PISA) op het Gebied van Begrijpend Lezen, Wiskunde en Natuurwetenschappelijke Vakken in het Jaar 2000*. Arnhem: CITO.