

Signs of the times

Monitoring the position of Dutch education: the O 8 project

Stage two: digging deeper

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1 Introduction

1.1 *The goals of the project*

Education is generally regarded as an essential factor in the transition from industrial societies to knowledge societies. Both the social cohesion and cultural capital of populations and the competitiveness of national economies depend increasingly on a solid foundation of knowledge and competence.

Regular education, provided in state-governed institutional frameworks, is, although not the sole provider of knowledge and competence, a key element in strategies to ensure a broad participation of people in processes of socio-cultural, economic and technological innovation.

However, if education is on its way to become perhaps the main assets of the knowledge society, its 'credentials' are far from transparent.

Little do we know exactly about how investment in education pays off in terms of knowledge and competence, and how these on their turn pay off in terms of social cohesion and economic competitiveness. In absence of this knowledge, we turn to a different method of assessing the state of Dutch education: benchmarking. Born as a management tool in industry, benchmarking can be described as "an ongoing, systematic process for measuring and comparing the work processes of one organisation to those of another, by bringing an external focus to internal activities, functions, or operations" (Kempner, 1993).

When applied to education systems, benchmarking appears to be different in almost every respect, but remains the same in essence. Relations between causes and effects are far more complex, if not fuzzy, in education systems than they are in business processes. Definition, measurement and validity pose immense problems. For instance, completion rates can be high as a result of excellent teaching practice, but also as a result of tolerant examination; direct measurement of student's competence in international surveys is needed to assess which is the case. Likewise, participation rates in higher education will highly depend on definition; in-depth analysis may reveal that upper-secondary vocational education in one country is of equal quality as some forms of higher education in another.

But given these 'warnings for the user', and provided that a holistic approach is conducted, there is still a strong case for comparing an education system with its relevant competitors, especially if this is done on a rather permanent basis, so as to monitor medium and long term changes in the indicators in the various countries.

1.2 *The O 8 project; the pilot study*

The above considerations have inspired the Dutch Ministry of Education, Culture and Science to explore the possibilities of an 'Educational Benchmark Monitor'. The provisional name of this exploratory project is 'O8', where O is the abbreviation of 'onderwijs' - the Dutch word for education - and 8 stands for the number of countries to be included in the benchmark-study eventually.

The central questions at the outset of this project were:

1. How can we position the Dutch education system among other national education systems?
2. How can we identify threats to that position? and
3. How can we learn from the education systems that show best-practice?

As a 'monitoring'-project, the project has an ongoing character. However, in the first two years of the project, there have been some substantial changes in the goals, methods and audiences. In the first year of the project (the pilot study) the central questions were sought to answer by identifying a *set* of indicators, based on an input-process-output model, and by collecting

information on these indicators for three countries to assess the feasibility and validity of the set indicators chosen.

The indicators were grouped into three groups: base statistics, indicators on intensities (or input and process characteristics) and indicators on performance. The range of sources used in the first stage was as broad as possible, using existing international data-bases as much as possible.

The O 8 monitor comprises the complete education system. Since the different segments of the education system differ substantially in their structure and the organisation of educational processes, we distinguished four segments or educational sub-systems at the start of the first stage:

- Pre-primary and primary education
- Secondary general education
- Secondary vocational education and adult education
- Higher education

For each of the sub-systems the state of education was to be described, both from a static and a dynamic perspective. Dynamic analyses will be used to identify possible threats to the position of Dutch education (the second goal of the project).

The choice of the countries to which the Dutch education system should be compared to is dominated by the prerequisite that these countries should be 'relevant competitors' to the Netherlands.

Relevance may be determined by a number of criteria such as

- (i) performance-level of the educational system;
- (ii) geographical vicinity;
- (iii) influence in regional and global educational developments; and
- (iv) 'kinship' of social, cultural and economic context.

Clearly, criteria ii and iv, and to a lesser extent iii, work out differently for different countries.

In addition to these substantive criteria, there are practical constraints (in terms of time and money) that limit the number of countries selected.

Based on the criteria and constraints mentioned, the initial selection of countries comprises Denmark, Belgium (or Flanders), Germany, Japan, the Netherlands, Sweden, the United Kingdom, and the United States of America. For the first stage, the Netherlands, Germany and Sweden were chosen to serve as test cases.

1.3 Stage two; digging deeper

Stage two was intended to be an implementation stage: extending the coverage of countries. However, the evaluation of the first stage changed the face of the project substantially. In the second stage the focus turned toward the positioning of the Dutch education system, as presented in the OECD publication *Education at a Glance (EaG)*, and away from the identification of threats to that position and the learning aspect of benchmarking.

The holistic and systemic approach, proposed and attempted in the pilot-study was seen as too superficial. The various constituents were more interested in in-depth analyses of understanding the Dutch score on a few indicators as presented in *EaG*. The phrase used in this respect was that the analyses should dig deeper (*een spade dieper*).

This fundamental change in perspective had consequences for the number of indicators that could be included in our analyses and the number of countries that could be covered.

The focus in the second stage is on two issues: the expenditure on education and the participation in education. The indicators chosen to represent these issues are:

- Total expenditure from both public and private sources for educational institutions as a percentage of GDP
- Participation in education by sector and type of institution

The change of perspective has also led to a reduction of the number of countries included in our analyses. Instead of eight countries, the second stage comprises five countries: the Netherlands, Sweden, Germany, Flanders (or Belgium) and the United Kingdom (or England). For the latter two countries the choice of regional coverage will be determined according to the availability of data. At this stage, Germany is considered as one country; in later stages we may focus on one or two *Länder*.

A final adjustment in the second stage refers to the educational sectors. The first sector is reduced to primary education only and the third sector is reduced to vocational education only. The data available on pre-primary education and adult education did not allow in-depth analyses (within the framework of this project).

The analyses in the second stage have a four-step layout for each indicator. After the presentation of the scores on the main indicator, the analyses focus on the coverage of the data as presented in EaG. Coverage refers to the entities included and their characteristics included. The data underlying the scores should include similar entities (types of institutions, types of students) and similar characteristics (types of expenditures, types of services, level and types of programmes etc.) for all countries. Only if this condition is met (or an assessment is made of the violations of this condition), we can start our second step: analysis of structural differences. The structure of educational systems differs significantly between countries. Such differences may cause part of the differences in scores on the indicators. Whether a system has a large or a small vocational sector may have consequences for expenditure on education; whether in a system more or less part time students are enrolled may have an effect on the rate of participation. This type of analyses will be made in the second step.

The third step consists of dynamic analyses, looking into changes in the factors addressed in the first two steps. The main reason to make these analyses is to find out whether the year of reference is an atypical year or not. Step four is an overview of policies directly related to the two issues. These policies may serve as explanations of the existence of structural differences between national education systems. The analyses are concluded with an overview of the effects the various explanations addressed in step one to four may have on the score as presented in EaG.

1.4 Operational outset

The O 8 monitor project is co-ordinated by CHEPS. The data-collection, analyses and reporting for the four education sub-systems are performed by four leading research institutes in those sub-systems.

These research institutes are:

- the *SCO-Kohnstamm Instituut voor onderzoek van opvoeding en onderwijs* at the University of Amsterdam ((pre-)primary education);
- the department of *Toegepaste Onderwijskunde* at the University of Twente (secondary general education);
- the *Max Gootte Kenniscentrum voor beroepsonderwijs en volwasseneneducatie* at the University of Amsterdam (vocational education and adult education), and
- the *Center for Higher Education Policy Studies* at the University of Twente (higher education).

The overall analyses, covering the relations between the sub-systems and the general education system characteristics, are done by CHEPS.

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2 Summary

2.1 The context

Education is generally regarded as an essential factor in the transition from industrial societies to knowledge societies. Both the social cohesion and cultural capital of populations and the competitiveness of national economies depend increasingly on a solid foundation of knowledge and competence.

Regular education, provided in state-governed institutional frameworks, is, although not the sole provider of knowledge and competence, a key element in strategies to ensure a broad participation of people in processes of socio-cultural, economic and technological innovation.

The above considerations have inspired the Dutch Ministry of Education, Culture and Science to explore the possibilities of an 'Educational Benchmark Monitor'. The provisional name of this exploratory project is 'O8', where O is the abbreviation of 'onderwijs' - the Dutch word for education - and 8 stands for the number of countries to be included in the benchmark-study eventually.

The project aimed to develop an organisational and analytical structure through which the Dutch education system can be positioned among other national education systems. In the first pilot-stage of the project, the focus was on developing the organisational structure and drafting an analytical framework that would be used in the second stage.

The organisational structure was formed in the fall of 1998. The structure consists of four leading research institutes responsible for data-collection, analyses and reporting for the four education sub-systems distinguished and one co-ordinating institute covering the relations between the sub-systems and the general education system characteristics.

These research institutes are:

- the *SCO-Kohnstamm Instituut voor onderzoek van opvoeding en onderwijs* at the University of Amsterdam (primary education);
- the department of *Toegepaste Onderwijskunde* at the University of Twente (secondary general education);
- the *Max Goote Kenniscentrum voor beroepsonderwijs en volwasseneneducatie* at the University of Amsterdam (vocational education), and
- the *Center for Higher Education Policy Studies* at the University of Twente (higher education).

The latter is also the co-ordinating institute.

In the pilot stage most effort went into developing a set of indicators that could lead to a comprehensive and consistent assessment of the position of the Dutch education system, compared to other national systems. Although a set of indicators was set up and preliminary data were collected for a limited number of countries, this line of investigation was discontinued in the second stage of the project, on which is the focus in the underlying report. The weak data-situation, the incompleteness (or immaturity) of the analytical framework and the political context contributed to a shift in interest of the constituents of the process. From a broad and general analysis, the focus shifted to more narrow, in-depth analyses to understand the Dutch score on a few indicators as presented in *Education at a Glance*. In this OECD publication the scores of all OECD member states are presented on a wide variety of indicators. The publication is becoming an important source for education policy makers.

The focus in the second stage is on two issues: the expenditure on education and the participation in education. The indicators chosen to represent these issues are:

- Total expenditure from both public and private sources for educational institutions as a percentage of GDP
- Participation in education by sector and type of institution

2.2 Design of the study

The analyses in the second stage have a three-step layout for each indicator. After the presentation of the scores on the main indicator, the analyses focus on the coverage of the data as presented in EaG. Coverage refers to the entities included and their characteristics included. The data underlying the scores should include similar entities (types of institutions, types of students) and similar characteristics (types of expenditures, types of services, level and types of programmes etc.) for all countries. After making an assessment of the violations of this condition, we start the second step: analysis of structural differences. The structure of educational systems differs significantly between countries. Such differences may cause part of the differences in scores on the indicators. Whether a system has a large or a small vocational sector may have consequences for expenditure on education; whether in a system more or less part time students are enrolled may have an effect on the rate of participation. The third step consists of dynamic analyses, looking into changes in the factors addressed in the first two steps. The main reason to make these analyses is to find out whether the year of reference is an atypical year or not.

The second stage covers five national education systems: the Netherlands, Sweden, Germany, Flanders (or Belgium) and the United Kingdom (or England)

2.3 Results by sector

2.3.1 Primary education

Education at a Glance does not comprise a table on expenditure on primary education. The scores on the financial indicators are combined for primary and secondary education. However, scores for primary education have been calculated based on the source data of the OECD. The Netherlands take a middle position in the ranking of the countries by expenditure on primary education as a percentage of GDP. The low position of Germany is remarkable. Drilling down these data reveals a number of insights on the nature of the differences.

First of all the coverage of the data is not identical in all countries. The Flemish and the British data refer to public expenditure on public institutions only. The calculated score for these two countries is therefore too low, compared to the other countries. Furthermore, there is a variety of issues regarding national differences in the structure of primary education that have an impact on the scores. The most important one is the difference in the length of the programmes. The German programmes are 2 years shorter and the British programmes are a year longer than the programmes in the other countries. Since a short programme will cost less than a long programme, these structural differences may explain part of the differences in the calculated scores. The relative size of enrolment in programmes for children with special needs may also have an influence on the level of expenditure. In Flanders and the Netherlands, the proportion of children in these special programmes is high, especially compared to Sweden. This is rather surprising since Sweden has the highest expenditure. Part of the surprise may be taken away by considering the way special programmes are organised.

In Sweden most of such programmes are integrated in regular primary schools. In Flanders and the Netherlands a substantial part of these programmes is offered at separate schools. This explains why Sweden scores low on special needs: those programmes are not recognised as such. Whether the way programmes for special needs are offered has an impact on educational expenditure is not clear. One link might be that a more separated set-up will increase the costs of transportation. In densely populated countries like the Netherlands and Flanders these costs in general are far less than in a country like Sweden, which mitigates the effect of the organisation of special needs programmes.

Other national characteristics like the provision of free milk, meals or day-care may have an impact on the calculated score. However, the data available on these issues do not allow an assessment of the size of that impact.

Another cluster of potential explanations comprises the level of teacher salaries, pupil staff ratios, class size, and teaching time. Teacher salaries are lowest in Sweden, which is surprising, given the high score on the financial indicator. A large part of this phenomenon can be explained by the low Swedish scores on pupil staff ratio, class size and teaching hours.

The national differences in the scores calculated are partly due to differences in coverage (Flanders and UK come out too low) and by structural differences, especially differences in the length of programmes that keeps the German score down and inflates the British score.

Since participation in primary education is compulsory in all countries, the analysis of the rate of participation is not relevant.

2.3.2 Secondary education

The second educational sector we distinguish is secondary (general) education. Although this type of education may well be distinguished from secondary vocational education in the national systems, it proves to be too complicated at the OECD level. National differences in structure and data delivery however prevent a consistent breakdown of data on secondary education into general and vocational.

What is remarkable regarding the financial indicator (total expenditure on secondary education as a percentage of GDP) is that no score could be calculated for two out of our sample of five countries. One might expect that this indicator is a rather valuable one for policy makers but the lack of information of expenditure of private households obscures this information for Flanders and the UK. Another important 'deviation' is that in Education at a Glance, the indicatorscores are aggregated with primary education.

Based on the UOE-datafiles, we could calculate the score on an alternative indicator for all five countries. Direct public expenditure for secondary education at educational institutions as a percentage of GDP was highest in Sweden, followed by the score in Flanders, the UK, Germany, and the Netherlands (see table 2.2).

In order to find out what might account for the differences in the score on this indicator, we first looked at the coverage of the data. Two major coverage issues arose. First it proved that expenditure on private institutions are not included in the UK, the Netherlands and Flanders. In the latter two, this does not influence the result, but for the UK this may lead to a significant underrepresentation of expenditure (by around 8%). The second issue is related to the way overhead costs as inspectorate and ministry are allocated to the educational sectors. In the cases of the Netherlands, the UK, and Sweden, these costs are allocated according to the size of the sector in terms of enrolment. In Germany and Flanders these costs are not allocated. If they would be allocated, expenditure would rise by around 5%.

We conclude that the low position of the Netherlands on this indicator is not due to coverage issues.

The next step to analyse the differences in scores on the financial indicator is to look into the structure of the secondary education systems. It showed that the secondary programmes are relatively long in Germany and relatively short in Sweden. If we assume that the length of the programmes influences expenditure, this may explain part of the difference in the scores of the Netherlands and Germany, but it would also enhance the leading position of Sweden.

Another set of variables that may have an impact on the indicator score is related to the major cost component: staff. The combination of teacher salaries, workload, instruction time, and pupil-staff ratio has a substantial impact. If we would correct the indicator scores for this set of variables, the score for Sweden would decrease significantly, whereas the score of Flanders would increase to a similar extent. The impact on the Dutch (decrease) and German (increase) scores would be much more moderate.

Based on the limited number of structural characteristics we looked at, we conclude that they account for a significant part of the differences in the indicator score. As for the Dutch position, these structural characteristics account for part of the difference between the Dutch and the German score: if we would correct for the structural characteristics, the scores would closer together.

Calculating a rate of participation, the second indicator assessed in this report, is not as easy as it may look like. There choices to be made (regarding the type of students included, and the size of the reference group) that make it difficult to calculate a rate of participation that is valid and relevant to anyone. In the report we choose the number of pupils aged 15-19 years as a percentage of the population in the same age-group. The differences in participation are rather small, except for the UK where it is significantly lower.

National differences in coverage cannot account for these differences. Structural differences may explain part of the differences. The length of programmes in the UK is shorter than in the other countries. Shorter programmes lead to a smaller stock of pupils enrolled. A similar line of reasoning can be followed regarding grade repetition. The more grade repetition occurs, the larger the stock of students enrolled will be. Again in the UK, the level of grade repetition is lowest which will lead to less students enrolled (compared to the countries in which grade repetition is more frequent like Germany, Flanders and the Netherlands). These two structural characteristics account for part of the low score of the UK on the participation indicator.

The results in the secondary education sector are not very shocking. It is not clear why this is the case, but the massive problems regarding the availability of data, leading to a high level of aggregation is very likely to mask possible differences.

2.3.3 Vocational education

Vocational education is the most diversified sector in all countries. Not only within the countries but also between the countries the variety makes an international comparison a difficult operation. It isn't surprising therefore to find that international databases lack statistical information on financial aspects of this sector. In *Education at a Glance*, no financial indicator on vocational education is presented.

National statistics are used in this report that reveal that public expenditure on vocational education (as a percentage of GDP) is lowest in the UK (0.28) and highest in Flanders (0.79). In Sweden expenditure is relatively high as well (0.60), whereas in the Netherlands (0.39) and Germany (0.43) the score can be characterised as moderate. However, if private contributions are taken into account as well the German score more than triples. Unfortunately, what private contributions do to the scores in other countries is not known.

There is no information available on coverage issues that may influence the scores. On the structural aspects there are some characteristics that may give a clue to the answer to the question why the levels of expenditure on vocational education differ. First of there is the size of the sector, in terms of enrolment. The German system is the largest, followed by the Dutch system, the Flemish, and the UK system. The Swedish system is the smallest. Assuming that a larger system will lead to higher expenditure, these results are not consistent with the scores on expenditure. Following the line of reasoning mentioned, we would expect expenditure in the Netherlands to be higher and in Sweden to be lower. The low Dutch score may be related to the absence of data on private contributions.

Another structural characteristic we looked at is the extent to which programmes are work-based versus classroom based. The assumption here is that public expenditure on work-based programmes is lower due to the fact that private entities contribute significantly in such programmes. The relatively high proportion of work-based programmes in the Netherlands and Germany may account for part of the low scores on public expenditure in the Netherlands and Germany.

As in secondary education, there is a set of staff-related variables that may influence the scores on the financial indicator. Teacher salaries are high in Germany and the Netherlands, intermediate in Flanders, and low in Sweden. Instruction hours are high in Flanders, followed by the Netherlands, Germany and Sweden. The score of Germany is due this combination inflated.

All in all there is a very narrow base for analysing the differences in expenditure on vocational expenditure.

As mentioned before, there are very few comparative data on the rate of participation in vocational education. The indicator used in the report is the proportion of upper secondary enrolment enrolled in vocational programmes. Germany comes out first (76%), followed by the Netherlands (70%), Flanders (68%), the UK (57%), and Sweden (51%).¹

Whether these differences are attributable to differences in the coverage of the data remains unresolved due to the lack of information. Two structural characteristics may influence the indicator score. If we look at the gender balance, it showed that there are differences in female participation between the countries. However, this information does not allow any further conclusions since vocational education in most countries comprises both male and female dominated sectors. The second structural characteristic is related to the part of workbased programmes. The high proportion of workbased programmes in Germany and the Netherlands support the suggestion that workbased programmes attract students that would not have participated in classroom based programmes. Workbased programmes tap a different market. The results for England however are in contradiction with this. There, the modern apprenticeship scheme has replaced classroom based programmes.

Vocational education is often seen as a part of the education system that is essential to the national economy. It is therefore remarkable that there is so little information available on that sector.

2.3.4 Higher education

The availability of data on higher education is much better than for secondary and vocational education. Although there are significant differences in the structures of national higher education systems, the sector as such as much better defined as the previous two sectors.

Information on expenditure on educational institutions at the tertiary level, including public subsidies to private households as a percentage of GDP (the first indicator) is available for all countries except Flanders. Among the four countries, the Netherlands scores second after Sweden. Germany is in last position. To include Flanders in this ranking, we used an alternative indicator (direct public expenditure on educational institutions). The ranking of Sweden and the Netherlands is similar to the ranking of the first indicator. Germany and the UK swapped position and Flanders ends up last.

If we are to interpret the scores on the first indicator, we may conclude that the Swedish society makes the biggest effort to provide tertiary education. The effort of German society is the smallest. The alternative indicator refers to the public effort to tertiary education. These interpretations are valid only if the coverage of the data is similar in all countries. In addition, we need to know whether the services or products delivered by the tertiary systems are the same. If the quality or character of the services or products of one system differs from another this may explain part of the differences in effort.

As far as coverage is concerned we first focus on public subsidies to households. Public subsidies to households are included in the calculation of the indicator. That means that in addition to the public and private contributions to education institutions public funds spend in non-education institutions are included. Private contributions to non-education institutions are not. This has to lead to a revision of the interpretation of the indicatorscores. Private contributions to non-education institutions are substantial and their relative size differs widely

¹ We underline that these percentages do not refer to rates of participation.

between countries. There is some discussion on whether or not to include cost of living as part of expenditure on tertiary education. OECD clearly chooses to include cost of living, but only that part that is covered by public subsidies. If we have to interpret the score on the indicator we have to describe it as the effort a society makes to tertiary education, excluding the private effort related to cost of living.

There are two more coverage issues regarding public subsidies to households. First, public subsidies through tax-regulations are not included. Since such subsidies occur in Germany only, the German score on the indicator is too low. The second issue refers to the public character of public loans. These loans are as public subsidies. The real public subsidies on these loans however are much lower since private entities (graduates) will repay most of these loans. These repayments are private contributions. The public subsidies to households are therefore significantly less than EaG makes us believe.

As for the last coverage issue, there are some indications that not all private higher education institutions are covered. The impact this will have on the indicator score is however marginal.

If we look at a number of structural characteristics we conclude that the services and products the national systems of tertiary education deliver differ .

National R&D-infrastructures differ. In some (small) countries most R&D is located within the higher education sector, whereas in other (larger) countries, R&D is concentrated in other sectors. The higher education systems in the Netherlands and Flanders deliver relative much R&D if compared to Germany and the UK. If we are interested in the effort a society makes for education, expenditures related to R&D should be taken out. In that case, the scores of the Netherlands and Flanders would decrease relatively much.

Another structural characteristic is the length of programmes. Long programmes are assumed to be more expensive than short programmes. In the Netherlands the proportion of long programmes in total programme offering is highest, in the UK it is lowest.

The level of programmes offered may also influence the level of expenditure: more higher level programmes will boost expenditure. It proved to be difficult to get a clear comparison regarding the level of programmes offered. Due to the variety in levels and classifications, the results did not allow for any conclusions regarding the level of programmes.

Whether programmes offered are work-based or classroom based proved to be irrelevant because of the limited scale of work-based programmes.

The last characteristics of programmes, the price, does make a difference. Some programmes, like medicine and technical programmes, are higher priced than other programmes. A high proportion of such high-priced programmes will have a positive effect on the level of expenditure. In Germany and Sweden that proportion is highest, in the Netherlands it is lowest.

In addition to the structural characteristics there is one more characteristic of the national systems analysed, i.e. the funding mechanism. Some funding mechanisms (output oriented) are considered to stimulate efficient behaviour of HEIs more than others (incremental). The relation between funding mechanism and level of expenditure does work only if the funding model is a claim model. The latter is the case only in Germany. In the other four countries, the funding mechanisms are distributional models. In these cases the funding mechanism will have no effect. In Germany, the mechanism may have lead to a slight increase in expenditure but it is impossible to quantify this effect.

The rate of participation in tertiary education, the second indicator analysed, is high in Flanders. The Dutch score follows as second. The scores of Germany, the UK and Sweden are in the same range. Calculating the net rate of participation in such a way that it can be presented as one figure is not as straightforward as it may look. In EaG, the rate of participation is broken down in three age-bands. The results show that participation in the first age-band (18-21) is extremely high in Flanders and low in Germany. In the second age-band (22-25) participation is high in the Netherlands and in the third age-band (26-29) participation is high in Germany.

These results are not significantly biased by the only coverage-issue identified, i.e. the way post graduate programmes are dealt with. In Germany, part of doctorate students are not included but the relative size of this category is small.

The analyses on structural differences showed some differences in the composition of the student body. The difference between the formal length of programmes and the actual time to complete is related to the rate of participation. The larger that difference, the higher the rate of participation will be. In Germany, and to a lesser extent in the Netherlands, this difference is substantial (10-40%) which leads to an inflation of the rate of participation for these two countries.

A second structural issue is the distribution of students by mode of enrolment, i.e. whether they are full time or part time enrolled. Knowing that the calculation of the rate of participation is based on head counts and assuming that a part time student remains longer in the higher education system, we can conclude that a high proportion of part time students will lead to a higher level of enrolment and a higher rate of participation. In the UK the proportion of part time students is high (around 30%) whereas in Germany this proportion is very low. The Netherlands take an intermediate position. Compared to the Netherlands, the rate of participation is too high in the UK and too low in Germany (and Flanders).

Using the three age-bands, OECD leaves out students aged 30 years and older when calculating the rate of participation. This leads to a score that is lower than the actual rate of participation. This 'flaw' leads to comparative distortions if the proportion of mature students (30+) differs between the countries. The data show that in the UK and Sweden around 30% of the students is older than 29 years. In Germany this percentage is 19, in the Netherlands it is 14 and Flanders completes the list with only 4% mature students. This indicates that the rates of participation as presented in EaG are too low.

2.3.5 Synthesis

In the synthesis chapter, the national education system is the starting point. The data presented and analysed refer, primarily, to all levels combined. However, breakdowns by level of education are frequently used in our exploratory analyses of national differences at the system level. In those analyses we will use the results of the sector reports presented in the previous chapters.

Total expenditure for educational institutions plus public subsidies to households as a percentage of GDP is lowest in the Netherlands. Sweden scores highest. No data are available for the UK and Flanders. The low Dutch score is due to the low score in primary and upper secondary education. To include the UK and Flanders in the analyses an alternative financial indicator was used (direct public expenditure for educational institutions as a percentage of GDP). Again, the Netherlands scores lowest and Sweden scores highest. However, the differences between the Dutch, the German and the British scores are relatively small.

There is one significant coverage issue: the provision of books. In all countries except the Netherlands books are provided by the educational institutions. In the Netherlands, books for secondary education are purchased by the pupils through commercial channels.

There are a few structural characteristics that may influence the scores on the financial indicator. We assume that the expected number of years pupils/students will participate in education is related to the level of expenditure. The longer school expectancy is, the higher expenditure will be. Flanders has the highest school expectancy, followed by Sweden, the Netherlands, the UK and Germany. No clear conclusions can be drawn regarding the proportion of high-priced programmes. The Netherlands and Flanders have relative much high priced programmes in primary education but the same two countries score low in that respect in tertiary education. The composition of the national education systems by level does also provide no clear results. Teaching staff compensation is a structural characteristic that may have a significant impact on total expenditure. Staff compensation is high in Flanders, followed by the Netherlands and Germany, and low in Sweden. These results refer to primary and secondary education. On the tertiary level no comparative data are available. However, the low compensation in Sweden is offset by low pupil staff ratios and low teaching time.

The in- or exclusion of R&D expenditure is an issue that has a significant impact on the expenditure indicator. For Sweden and the Netherlands, excluding R&D would mean a significant decrease in the indicator score. The decrease would be smallest in the UK.

In addition to the structural characteristic we looked into the changes in indicatorscores. These analyses showed a strong decline in Flanders. Such a decline could not be found in national statistics nor could it be due to a strong increase in GDP. We concluded that there must have been significant changes in the Flemish data as used by OECD.

The overall conclusion regarding the indicator on expenditure on education is that the Dutch position is low. This position will not change if we would correct the calculations for the differences in coverage and structure discussed above.

The indicator EaG presents on the rate of participation is difficult to used for positioning the five countries in an unambiguous and simple way. Based on a visual inspection of the data presented and a tentative calculation based on these data we conclude that the Netherlands scores highest, followed by Sweden, Germany, Flanders, and the UK.

There are no significant coverage issues that might influence the positions.

The length of the programmes up to the end of upper secondary education is a structural aspect that has a significant impact on the enrolment rate. The UK programmes are the shortest, whereas the Dutch programmes are the longest. The scores on time to complete are also in line with the enrolment rate in the Netherlands. In the UK and Sweden the time to complete is low in secondary education. In Germany and the Netherlands the time to complete tertiary education is relatively long. In total this means that the time to complete in the Netherlands is relatively long. There are two structural characteristics that might change the position on the enrolment rate. The first refers to the mode of enrolment. Since the enrolment rate is based on headcount, a large proportion of part time enrolment will inflate the rate of participation. Correcting for the high proportion of part time enrolment in the UK therefore would lead to a further deterioration of the UK position. The low proportion of part timers in Germany would relatively improve the score. The second characteristic is the proportion of mature students. In calculating the rate of participation enrolment aged 30 years and older are excluded. Correcting for the high proportion of mature students in the UK and Sweden would improve the score of these countries. Although exact quantification of these effects is not possible it is likely that Sweden will take over the leading position from the Netherlands.

2.4 Conclusion

EaG has developed into a document that plays an important role in national discussions regarding education. Partly because international comparison is becoming more important for national policy-makers and partly because EaG is becoming better.

EaG shows that the Netherlands is, compared to four other Western European countries, positioned rather low on the indicators on finance and funding of education and that it scores rather high regarding participation in education.

The purpose of the project was to drill down these data and find out whether the data are reliable. We identified a number of systems characteristics (scope of the data, structural characteristics) that might help to assess the reliability of the data. In working our way through the figures we came across problems of quantifying the issues at hand and their impact on the indicator score. Because of this, we could not determine the exact 'bias' the OECD data contain. Based on a more qualitative approach we concluded that it is plausible to state that the low Dutch score on the financial indicator is not too low, taken into account the reliability issues we analysed. For the second indicator, participation, the analyses have not come up with clear answers to the questions. The variance in participation is relatively low which makes it extremely difficult (if not impossible) to attribute these differences to differences in coverage and structure.

The chapters describing the educational sectors contain a wealth of information. There is a potential for further analyses explaining the differences in the scores between the countries, but without a thorough analytic framework, that potential cannot be used.



SCO-KOHNSTAMM INSTITUUT

Signs of the times

*Monitoring the position of Dutch
education: the O 8 project*

Stage two: digging deeper

Primary education

Hans Lington

3 Primary Education

3.1 Introduction

In this section statistical data and background information will be presented regarding primary education in the Netherlands, Sweden, Germany, Belgium and the United Kingdom. The data for the United Kingdom include mostly data for England, Wales, Northern Ireland and Scotland.

At this stage of the project for Belgium only Flanders will be dealt with. In a later stage also for the UK and for Germany a limitation to a certain region will be considered, depending on the availability of data.

The indicators presented will be

- total expenditure from public, private and international sources for educational institutions plus public subsidies to households as a percentage of the Gross Domestic Product (GDP)
- participation in primary education.

In the subsequent paragraphs for each of the indicators the next aspects will be dealt with:

- *coverage*,
for which subjects costs are in- or excluded in the indicator, causing possible differences
- *structural differences*;
which differences in educational systems can provide an explanation for different outcomes;
- *policy*,
which policy initiatives can be indicated regarding financing primary education;
- *dynamic analyses*,
what are apparent trends looking at several years.

In a summarising paragraph an overview will be given regarding possible explanations of differences in indicator scores and their relevance in the five countries considered.

3.2 Expenditure on primary education as a percentage of GDP

In this section we look for every relevant country into the total expenditure on primary education as a percentage of their Gross Domestic Product (GDP).

The indicator used is the one from Education at a Glance 1998 (OECD, 1998) comprising public, private and international sources and public subsidies to households.

The data for 1995 are presented in Table 3.1.

Table 3.1: Total expenditure on primary education institutions (public, private and international sources + public subsidies to households) as a percentage of GDP

	1995
NL	1,22
D	0.76
S	1.98
FL	1.06*
UK	1.56*

source: UOE data 1995

* : only direct government expenditure, without private and international sources

The data on total expenditure on educational institutions as a percentage of GDP comprise the following expenses:

- direct public expenditure to educational institutions
- private payments to educational institutions
- international payments to educational institutions
- public subsidies to households and to other private entities

In the next paragraphs we look into expenditure items for which costs are in- or excluded in the indicator, causing possible differences.

3.2.1 Coverage

Type of programme

Financial data regarding primary education always include expenditure on special education. It can be argued that special education in special education institutions is more costly than regular schools. Therefore when the percentage of pupils in special education institutions is higher the expenses will also be higher.

Looking at special education in the different countries it is apparent that the extent to which pupils with special educational needs are allocated to special education institutions depends on the country policy about special education. It differs from segregation to almost total integration.

All countries involved are pursuing a policy of integration. Sweden is an example of almost total integration. The percentage of pupils in special education institutions is very low.

Differences are also caused by the (new) definitions of special educational needs. The following SEN taxonomy has been adopted by the OECD:

- the mentally and/or physically handicapped;
- pupils/students with learning difficulties and not to be categorised as A or C
- pupils/students with educational needs arising from socio-economic, cultural and/or linguistic factors.

The differences between the relevant countries, according to international statistics are shown in Table 3.2.

Table 3.2: Pupils in special education schools as a percentage of total enrolment in primary and secondary education

	<i>educational level</i>	<i>1995/1996</i>	<i>educational level</i>	<i>1995/1996</i>
NL	primary (age 6-11)	6,69	primary + secondary 1st	5,24
D	-	-	primary + secondary 1st	4,32**
S	primary (age 7-12)	0,92	primary + secondary 1st	1,02
FL	primary (age 6-11)	5,52	primary + secondary 1st	7,0
UK	primary (age 5-10)	0,85*	primary + secondary	1,23

Sources: NL: CBS Statline; D: Grund- und Strukturdaten; S: Statistical Årsbok; EaaG 1998

* UK: 1997/1998;

** D: 1996/1997

These differences can mainly be explained by the differences in policy and the definitions used.

The number in Table 3.2 regards only pupils in separate institutions for special education. The low number for Sweden is explained by the fact that it only regards Category A pupils, while in the Netherlands it regards category A and B pupils.

The numbers show also, comparing those for primary education only with those for primary and secondary education together, that in the Netherlands in a rather early stage pupils are referred to special education institutions.

Looking at the educational expenditure and taking into account the differences in pupils allocated to special education institutions would mean that for The Netherlands reducing the percentage of pupils in special education institutions could cause a reduction in educational expenditure. The significance of this reduction however will be doubtful.

A more significant reduction in expenses would occur taking into account the costs of pupil transport which are mainly related to special education.

Related expenditure

Under this heading there are a number of items for which costs are comprised in the educational expenditure data, but which are not equally customary in every country, at least not always to the same amount.

When data are available cost estimates could be made for every item and their comparative contribution to the total educational expenditure.

Schoolmilk / lunches / meals

Like supply of schoolmilk in the Netherlands in other countries like Sweden and the United Kingdom pupils have free meals (lunches) at school. That means that if these costs also would be included in the Netherlands, the educational expenditure would increase.

Supervision costs full-day schools

In case children stay at school for a full day supervision costs arise for the time pupils are not in class getting instruction.

School welfare or after school youth care

Welfare for schoolchildren is a collective general term for activities organised during the school-free period of the day. It has the form of an after-school centre, an open recreational activity centre or a family day care home.

In Sweden for instance municipalities are obliged to provide welfare for schoolchildren to children of working or studying parents, or in cases where the child has an individual special need.

Teaching aids

Whether teaching aids are paid for by school or by the parents (or by a sponsor in case of computers) it would only cause a shift between public and private expenditure.

Public subsidies to households and private entities

Also under this heading there are a number of items for which costs are comprised in the educational expenditure data, but which are not equally customary in every country, at least not always to the same amount.

Child allowances / Tax reductions

In case a country has a system of supporting parents by means of child allowances and/or tax reduction, the question can be raised to what extent these 'subsidies' are used for educational expenses and whether or not they expenses are included in the total national educational expenditure.

Parental leave

Parental leave is becoming more and customary. In the Netherlands, and maybe in other countries too, (one of the) parents usually take advantage of parental leave just after maternal leave. In Sweden however parents have a right to parental leave during the whole *Grundskola* period of their children. When this would only be a matter of only job guarantee, it would have no consequences for educational expenditure.

Pupil transport

This item has been covered in the paragraph on structural differences: type of programme. Since the majority of pupil transport takes place to special education institutions (at least in the Netherlands) changes in policy regarding special education would have an effect on these expenses.

It is not known yet which part of educational expenses in other countries could be attributed to pupil transport.

Expenditures not allocated

Some countries show in their UOE data file a considerable amount of educational expenses, which are not or could not be allocated to educational levels.

To get a clear view estimates should be made about which part of this non-allocated expenses could be attributed to primary education, based on knowledge of the items within this expense category. To do this only based on enrolment figures would be too hazardous.

Private institutions

The UOE data for the UK do not include private expenses to private institutions.

When we make an adjustment based on the enrolment data in public and private institutions, assuming expenditure per pupil in private institutions are at least equal to those in public institutions, the expenditure for primary education as a percentage of GDP in the UK would raise from 1,56 to 1,64 %.

3.2.2 Structural differences

Differences in length of programmes

In this paragraph we will look into differences in educational systems which possibly can provide an explanation for different outcomes in total expenditure.

Figure 3.1: Organisation of primary education

	ISCED 0		ISCED 1						ISCED 2			
	pre-primary		primary						lower secondary			
	4 jr	5 jr	6 jr	7 jr	8 jr	9 jr	10 jr	11 jr	12 jr	13 jr	14 jr	15 jr
NL	Basis ond.		basisonderwijs						voortgezet onderwijs			
D	Kindergarten		grundschule				grundschule/ oriënt. klassen sek. bereich 1		sekundar bereich 1			
B (Fl)	Kleuteronderwijs		lager onderwijs						secundair onderwijs			
UK	Nursery		primary education					secondary education				
S	Daghem	sexårs virksamhet	grundskola									

As can be seen from Figure 3.1 the educational organisation of primary education differs rather widely between the five countries.

Black bars indicate the start of compulsory education. The grey areas indicate the enrolment years on which expenditure data are based.

The Netherlands

In the Netherlands basic education (*basisonderwijs*) comprises 8 grades for the age groups 4 through 11 year olds. Compulsory education starts at the age of 5.

Belgium, Flemish Community

Basic education (*basisonderwijs*) comprises nursery school and primary education for children aged 2,5 through 11 years. Compulsory education starts at the age of 6.

Germany

In Germany compulsory education starts at the age of 6. Basic education is provided in the *Grundschule*, comprising 4 grades for the age groups 6 through 9 year olds. In two *Länder* the *Grundschule* comprises 6 grades. Next to the *Grundschule* there are *Freie Waldorfschulen* and *Integrierte Gesamtschulen* with different grade systems.

After *Grundschule* pupils change to the first two orientation grades in several kinds of secondary education (*sekundar bereich 1*).

Sweden

In Sweden compulsory education starts at the age of 7. Basic education comprises 9 grades for age groups 7 through 15 year olds. More and more 6 years olds are taking part in a preparatory educational group (*sexårsvirksamhet*).

United Kingdom

Compulsory education begins at five in England, Wales and Scotland and at four in Northern Ireland. The usual age for transfer to secondary schools is eleven in England, Wales and Northern Ireland and twelve in Scotland.

Since the length of primary education is different between countries and countries seem to apply the ISCED classification in different ways, also expenditure for primary education will be influenced.

Depending on the country structure expenditure for primary education is based on:

- for the Netherlands grades 3 through 8 of *Basisonderwijs* (ages 6 through 11),
- for Germany grades 1 through 4 of *Grundschule* and the first 4 grades of the *Freie Waldorfschule* (ages 6 through 9),
- for Sweden grades 1 through 6 of *Grundskola* (ages 7 through 12);
- for Belgium (Flemish Community) grades 1 to 6 of *Lager Onderwijs* (ages 6 through 11),
- for the UK grades 1 to 6 of primary education (ages 5 through 10), including 4 year olds in nursery classes.

Correcting for these differences would cause the percentage of GDP for Germany raise to 1,14 % and for the UK to go down from 1,56 to 1,33 %.

Cheap and expensive programmes

The supposed extra costs of special education could also be dealt with under this heading. The subject is covered in paragraph 3.2.1.

Other

Teacher salaries

The main part of educational expenditure (60 – 80%) consists of salary costs and other personnel compensation.

So differences in teacher salaries also make up a factor in educational expenditure.

The differences are not that big that major shifts can be expected.

Table 3.3: Annual statutory teachers' salaries in public institutions as a ratio of GDP per capita, at starting salary and after 15 years.

	1996	
	start	15+
NL	1.1	1.4
D	1.3	1.7
S	0.8	1.1
FL	0.9	1.2
UK	1.0	1.6

Pupil-teacher ratio, class size and teaching time

The relation between pupil-teacher ratio and both class size and amount of instruction is complicated. It depends on differences in the length of the school year, the number of hours pupils attend school each day, the length of a teacher's working day, the number of pupils or classes for which a teacher is responsible and the division of the teacher's time between teaching and other duties.

It must be emphasised that pupil-teacher ratio is not an indicator of class size. The fact that one country has a lower ratio than another does not necessarily imply that the first country has smaller classes or even that pupils receive more instruction.

In spite of this complex relationship, differences in pupil-teacher ratio, class-size and teaching time do have an effect on educational expenditure.

Pupil-teacher ratio

Data show that Sweden has the most favourable (= lowest) pupil per teacher ratio, while Germany and the Netherlands are on the same higher level.

Table 3.4: Ratio of students to teaching staff (calculations based on full time equivalents) in primary education (incl. special education)

	<i>pupil age group</i>	1996
NL	6-11	20.0
D	6-9	20.9
S	7-12	12.7
FL	6-11	13,0*
UK	5-10	21.7

Source: EaaG 1998, Eurybase

* B: 1995

Comparing these data one has to take into account that the numbers for Sweden relate to teaching staff only, while for Germany and the Netherlands also other (non-teaching) staff members are included. When this would also be done for Sweden their ratio would be even better (= lower).

Levelling for pupil-teacher ratio would mean higher expenditure for the Netherlands.

Class size

An international survey shows that class size in regular primary schools in the Netherlands is rather big: an average of almost 25. In Germany it is about 23, in Sweden and France about 20. In Norway class size is about 15.

Table 3.5: Average class size

	<i>year unknown</i>
NL	25
D	23
S	20
FL	-
UK	27

Teaching time

The amount of teaching hours in primary education is highest in the Netherlands.

Table 3.6: Number of teaching hours per year per teacher in primary education

	1995/1996
NL	975
D	772
S	624
FL	861
UK	800

Source: EaaG 1998

Under the assumption that educational expenditure for a great deal consists of teacher salary costs, the total expenditure could be corrected for these differences resulting in higher expenses

for the Netherlands. For when Dutch teachers would have the same teaching time per person as in Sweden (624) and the statutory pupil instruction time (975) would stay the same, about 50% more teachers would have to be employed.

To put it differently: If teachers in Sweden would have a total teaching load equal to the statutory pupil instruction time of 741 hour, expenses on teacher salaries would be 16% less.

3.2.3 Policy

In this section we will discuss policy initiatives or standing policies regarding the issues raised above. We take a look into policy initiatives regarding education and the educational system which could be of interest regarding the financing and expenditure of primary education;

In general the following issues would be interesting to consider:

- Class size reduction
- Pupils with Special Educational Needs
 - In the Netherlands attempts are made to reduce the percentage of pupils in special educational institutions by supplying a personal budget for extra education in a regular school
- Computers in school
- Pupils at risk, special attention for second language learning, pupils from broken families

In 1997 the new government of the UK published a policy paper on raising the standards in education over 5 years. The paper covers (among a lot more) issues regarding

- class size reduction
- improvement of achievement in mathematics and English
- improving management and quality
- improving teaching and learning
- supporting teachers
- supporting pupils

3.2.4 Dynamic analyses

For some of the before mentioned data time series can be made, revealing possible trends.

Changes in the indicator score

Regarding total expenditure every country is showing an increase of the GDP percentage

Table 3.7: Total expenditure on primary education institutions (public and private) as a percentage of GDP

	1992	1993	1994	1995	1996
NL	-	1.2	1.2	1.22	-
D	-	-	-	0.76	-
S	-	2.0	2.0	1.98	2.05
FL	1.34*	1.35*	1.39*	1.49	1.51
UK				1.56**	

Source: EaaG 1998; INES-database, CBS; B: Statistical yearbook

* B: excl special education

** UK: excl. private institutions'

3.2.5 Changes in the factors described above

Special education

In spite of all countries' policy to integrate pupils with special needs into regular education, the percentage of pupils referred to special schools is increasing in every country.

Table 3.8: Pupils in special education institutions as a percentage of total enrolment in primary education

	1992/1993	1993/1994	1994/1995	1995/1996	1996/1997	1997/1998	Change 1993-96
NL	6.61	6.63	6.71	6.69	6.48	6.36	- 4 %
D	-	-	-	-	-	-	-
S	-	0.85	0.88	0.92	0.93	0.98	+ 15 %
FL	-	-	-	5.52	5.53	5.67	-
UK	-	-	-	-	-	0.85	-

Sources: NL: CBS Statline; G: Grund- und Strukturdaten; S: Statistical Årsbok; EaaG 1998; UK: National Statistics

Table 3.9: Pupils in special education institution as a percentage of total enrolment in primary and secondary education (ISCED 1 and 2)

	1992/1993	1993/1994	1994/1995	1995/1996	1996/1997	1997/1998	Change 1993-96
NL	4.83	5.00	5.10	5.24	5.29	5.29	+ 10 %
D	-	-	-	-	4.32	-	-
S	0.93	0.96	0.99	1.02	1.03	1.09	+ 17 %
FL	-	-	-	7.0	7.0	7.12	-
UK	-	-	-	1.23	1.17	1.16	-

Sources: NL: CBS Statline; G: Grund- und Strukturdaten; S: Statistical Årsbok; EaaG: Eurybase

Pupil-teacher ratio

Unlike other countries the Netherlands seem to show a favourable decrease in the pupil-teacher ratio in primary education.

Data on this issue still have to be checked on coverage: including vs. excluding special education, qualified teachers only vs. all staff, etc.

Table 3.10: Ratio of students to teaching staff (calculations based on full time equivalents) in primary education (ISCED 1)

	<i>pupil age group</i>	91/92	92/93	93/94	94/95	95/96	96/97	Change 91 - 95
NL	6-11	23.6	--	22.4	-	20.0	--	- 15 %
D	6-9	19.6*	20.0	20.5	20,7	20.9	21,6	+ 7 %
S	7-12	11.9	--	12.5	12.3	12.7	13.0	+ 7 %
FL	6-11				13.0			
UK	5-10					21.7		

Source: EaaG 1997, 1998; DE: Grund- und Strukturdaten; Eurybase

* D: former FRG;

3.3 Participation in primary education

Regarding participation in primary education differences between countries with an effect on educational expenditure can hardly be expected. In every country primary education is compulsory so participation would be almost 100%

Possible differences relating to participation are more to be found in the amount of pupils in special education institutions. This has been raised already in the former sections.

3.3.1 Coverage

Administering of ISCED level

According to the UOE enrolment data for the UK it seems that also 4 year olds are comprised under the heading of primary education. This would mean that educational expenditure for primary education would consist of 7 grades instead of 6, like in other countries (with an exception for the Grundschule in Germany)

Correcting for this difference would cause the expenditure percentage for the UK to go down from 1,56 to 1,33 %.

Differences of this kind will be avoided with the new ISCED arrangement.

3.3.2 Structural differences

Length of programmes

The differences in length of programmes have been dealt with in the former section

3.3.3 Policy

There are no policy initiatives that can be indicated regarding total enrolment in primary education. Actual initiatives regard shifts from special education institutions to regular educational institutions.

3.4 Overview

In Table 3.11 the before mentioned factors are summarised.

For each country the levelling effect of each factor is given.

A plus sign (+) meaning that adjusting for this factor would have an increasing effect on the total educational expenditure for primary education in a country.

These are only preliminary indications of possible effects on expenditure. Reservations have to be made about the real influence of these aspects, since most of them still have to be verified.

Table 3.11: Possible effects on educational expenditure for primary education

factor	NL	D	S	FL	UK
Length of programme		+			-
Type of programme	-				
Enrolment coverage					+
Teacher salaries	+/-	-	+		+
Pupil-teacher ratio	+		-		
Class-size reduction	+		+/-		+
Teaching time	++	-	-	-	-
Type of institution					++
Schoolmilk / lunches / meals	+		-		-
Supervision full-day schools	+		-	-	-
School welfare / after-school youth care	+		-		-
Teaching aids	+				
Child allowances / tax reductions					
Parental leave			+/-		
Pupil transport	-				
Non-allocated expenses		+		+	
Policy items	+				+

Signs of the times

*Monitoring the position of Dutch
education: the O 8 project*

Stage two: digging deeper

Secondary education

Hans Luyten

4 Secondary Education

4.1 Introduction

The main focus of this report is on education expenditure and participation. The indicator most frequently referred to in public debates on expenditure is the percentage of GDP per country on education. A serious problem with this indicator is that it is affected by enrolment rates and the size of the youth population. A more sophisticated indicator is the cost per student. To be valid this indicator requires not only an accurate assessment of educational expenditure but also of the numbers of students participating. The next section focuses on specific problems with regard to data collection on costs in secondary education, especially from a Dutch perspective. The section deals with possible explanations that may be derived from available international (OECD) statistics to explain the relatively low expenditure on education in the Netherlands. The third section is on participation.

4.2 Expenditure on secondary education as a percentage of GDP

This section focuses on potential shortcomings in the international statistical data with regard to educational costs at the lower and general upper secondary level. The main difficulties for the Netherlands with regard to the statistical information in the UOE (UNESCO, OECD & EU) data collection have been identified. Below it is reported in how far these potential shortcomings may influence the position of the Netherlands in international statistical reports as compared to Germany, Sweden and the United Kingdom. The discussion is based on the UOE data provided by the Netherlands, Sweden, Germany and the United Kingdom and relates to data for 1995.

With respect to expenditure on education the indicator most frequently referred to in public debates is the percentage of GDP per country spent on education. The table below shows the figures for primary and secondary education. The figures are quite stable over the 1993-1995 period with a slight decrease for Germany. The most remarkable thing, however, is the lack of comparable data for such a seemingly basic indicator.

Table 4.1: Expenditure on primary and secondary education as a percentage of GDP (expenditure from both public and private sources on educational institutions plus public subsidies to households)

	1993	1994	1995
NL	3.4%	3.4%	3.4%
D	4.1%	3.9%	3.9%
S	5.1%	5.1%	5.1%
FL	---	---	---
UK	---	---	---

Source: Education at a Glance 96 (p.60), 97 (p. 63), 98 (p. 82)

4.2.1 Coverage

The next sections deal with specific problems regarding data collection on cost in secondary education.

Private payments

In the Netherlands part of these payments (the payments by households) are estimated on the basis of a survey conducted in 1991. Private payments to educational institutions excluding public subsidies to households and other private entities make up 4.6% of the total public and private expenditure on lower and upper secondary education in the Netherlands. The figures relating to payments by households have been corrected for inflation. Whether this is an underestimation or an overestimation of the true expenditure is unclear. It is unclear how far data from the other countries are accurate. In Sweden and the UK these costs account for less than 1% of the total costs. In the case of Germany the contribution of the private sector to the funding of public and private education is known. But it cannot be determined which funds come from households and which come from other private entities. The private contributions account for approximately 25% of the total expenditure on secondary education in Germany. In Sweden and the Netherlands payments by firms and non-profit organisations make up less than 1% of the expenditure on secondary education. Data for the UK and Flanders are not available.

Transfers and payments to private entities

Costs for student transportation (and other provisions) in the Netherlands are based on financial reports by the local governments, but not all local government reports specify these costs. As a result, the costs are somewhat underestimated. In the Netherlands these costs account for 0.7% of the total government expenditure on education across all levels. However, the report "Education and Training Statistics for the United Kingdom 1998" (DFEE) shows that in 1996-1997 the cost on student transportation accounted for 2.2% of the total government expenditure on education. Expenditure on meals and milk accounted for an additional 0.6%. Although the UK statistics indicate that costs on transportation and meals account for no more than a modest proportion of the total expenditure, they do imply that these costs may be underestimated in the Netherlands. In Flanders, Sweden, Germany and the UK accurate estimates of the government contribution to student transportation costs are included in the expenditures by local or regional governments.

Funds from international agencies and other foreign sources

For the Netherlands, there is no information on funds from international agencies and other foreign sources, but they are believed to be of minor importance. This lack of information may lead to an underestimation of the educational costs in the Netherlands. On the other hand, none of the other four countries in this report takes international funds into account when the costs for lower and upper secondary education are calculated.

Expenditures not allocated

In the Netherlands, Sweden, and the UK overhead costs such as costs for the inspectorate and ministry are allocated to ISCED levels on the basis of the number of students. In Germany and Flanders, some of the overhead costs are grouped under the heading "not allocated by level". The amount is about 4.6% of the total expenditure.

Private institutions

In the Netherlands no information is available with regard to expenses on private institutions that are not funded by the government. For the Netherlands this probably leads to a minor underestimation of the educational expenses, as the independent private institutions cover less

than 1% of the students in Dutch lower and general upper secondary education. It does, however, lead to a substantial underestimation of the educational expenses in the United Kingdom, where 8% of the students in lower and general upper secondary education are in independent private institutions and data on the financing of the independent private institutions are not available. Although the payments to independent private institutions in the Netherlands are not known, the number of students is known. Participation is therefore not underestimated because of a lack of information with regard to independent private education. The same goes for the UK. Since financial information on the private sector is not available, the students in the private institutions are not taken into account when the costs per student are calculated. In the statistical information on Germany no distinction is made between independent and government-dependent private education. Participation and finance on private education are grouped into a single category. In Sweden there is no independent private lower secondary education, while the size of the independent private sector at the upper secondary level is negligible. In Flanders both the numbers of students in and the cost for private secondary education are unknown. Cost and numbers of students are probably negligibly small in Flanders.

If financial information on the private sector is not available in any of the countries, the students in the private institutions are not taken into account when the costs per student are calculated.

Table 4.2: Summary of the findings with respect to coverage

Funds from international agencies and other foreign sources	Not taken into account for the Netherlands. The same goes for Germany, Sweden, Flanders and the UK
Expenditure not allocated	In general, overhead costs such as costs for the inspectorate and ministry are allocated to ISCED levels on the basis of the number of students.
Expenditure on independent private institutions	Not taken into account for Netherlands, Flanders, Sweden and the UK Private independent education accounts for less than 1% in the Netherlands, Flanders and Sweden but for 8% in the UK In Germany, no distinction is made between dependent and independent private institutions.
Payments by households to educational institutions	Reported costs in the Netherlands make up 4.6% of the total costs but are based on a 1991 survey. In Sweden and the UK the costs reported account for less than 1% of the total costs. In Germany these costs are grouped into a single category with payments by firms and non-profit organisations which make up approximately 25% of the total costs.
Transfers and payments to private entities	Underestimated transportation costs in the Netherlands. Reported transportation costs account for 0.7% of total Dutch expenditure, while they account for 2.2% in the UK
Students in independent private institutions	Numbers of students known in the Netherlands and UK Germany applies a single category for independent and government-dependent education. Negligible numbers in Sweden.

The general conclusion is that although in some respects expenditure may be underestimated in the Netherlands, it does not seem likely that this causes a less “flattering” position of the Netherlands in international comparisons.

4.2.2 Structural differences

Differences in length of programmes

The national systems for secondary education differ widely across countries. This is evident even if only five educational systems are taken into account. Of the five countries in question the systems in Sweden and the UK are most simply structured. Until 16 years of age Swedish pupils attend the “Grundskola” which includes both primary and lower secondary education. The last three years of the Grundskola count as lower secondary education. Full-time schooling is compulsory until the age of 16. Upper secondary education is provided by the “Gymnasieskola” where pupils may take vocational programmes (program med yrkesämnen) or general programmes (övriga program). For the UK the description only relates to England and Wales. The systems in Northern Ireland and Scotland are somewhat different. Secondary education starts at age 11 and lasts until the age of 16. The border between lower and upper secondary lies at age 14. After finishing “key stage 4” students can either continue in general or vocational upper secondary education.

The German system looks considerably more complex, although this is partly due to regional differences. For example, full-time education is compulsory for nine years in most “Länder” but in four “Länder” compulsory full-time education comprises ten years. Lower secondary education starts relatively early, namely at the age of 10, with a 2-year orientation stage (“Orientierungsstufe”). Pupils are selected into one out of five educational tracks based on their (perceived) cognitive aptitudes. Two of these tracks (“Gymnasium” and “Gesamtschule”) prepare for general upper secondary education (“Gymnasiale Oberstufe”), whereas the other three generally prepare for further vocational education and training of various levels. The typical duration of general secondary education is three years. The duration of the vocational programmes varies.

In Flanders lower secondary education starts at age 12 and lasts until 14. After that students must choose between general upper secondary education (“ASO”) and one of the vocationally oriented programmes. In lower secondary education there is already some selection between pupils with learning problems (in “leerjaar B”) and the others (in “leerjaar A”). The general upper secondary program prepares for university. Many students, especially in the vocational programmes take an extra year, which is generally considered as secondary education in Belgium but which is not secondary education according to the international classification (ISCED).

The Netherlands

10 | 11 | 12 | 13 | 14 | 15 || 16 | 17 | 18 | 19 | 20

VWO										
HAVO										
MAVO										
(I)VBO										
						BOL				
						BBL				

Germany

10 | 11 | 12 | 13 | 14 | 15 || 16 | 17 | 18 | 19 | 20

Orientierungsstufe	Gymnasium	Gymnasiale Oberstufe	
Orientierungsstufe	Gesamtschule		
Orientierungsstufe	Realschule	Fachoberschule	
	Schularten mit mehreren bildungsgängen	Berufsfachschule	
Orientierungsstufe	Hauptschule		
		Berufsschule und betrieb	

Sweden

10 | 11 | 12 | 13 | 14 | 15 || 16 | 17 | 18 | 19 | 20

Grundskola	Gymnasieskola övriga program
	Gymnasieskola program med yrkesämnen

Flanders

10 | 11 | 12 | 13 | 14 | 15 || 16 | 17 | 18 | 19 | 20

1ste graad leerjaar A	ASO 2e graad	ASO 3e graad	
	TSO 2e graad	TSO 3e graad	
	KSO 2e graad	KSO 3e graad	
1ste graad leerjaar B	BSO 2e graad	BSO 3e graad	

England and Wales

10 | 11 | 12 | 13 | 14 | 15 || 16 | 17 | 18 | 19 | 20

Secondary school Key stage 3	Secondary school Key stage 4	
		Further Education Institutions

In the Netherlands secondary education starts at age 12. Just as in Germany pupils are selected into different tracks on the basis of their (perceived) cognitive ability. The pupils who were most successful in primary education are selected for the pre-university track (“VWO”) and the pupils that had more difficulties are selected for the pre-vocational track

(“VBO”) or even the individualised pre-vocational track (“IVBO”). In all four tracks the students follow a common core curriculum (“basisvorming”), but in the more advanced tracks it is taught at a faster pace and/or extra topics are added. The least advanced tracks (“MAVO” and “(I)VBO”) provide a 4-year course. The pre-university track (“VWO”) takes (at least) 6 years and the HAVO track offers a 5-year program. In the Dutch system the transition from lower to upper general secondary education is hardly visible. The last two years of the VWO and HAVO track are considered to be general upper secondary education. The first years of these tracks are considered to be lower secondary. All four years of both the (I)VBO and MAVO track count as lower secondary education. The duration of upper secondary vocational varies and it may start at age 16 (or later).

Expenditure per student

Besides some of the more practical difficulties discussed previously, an additional problem with expenditure on education as a percentage of GDP is that this indicator partly reflects participation rates and the size of the youth population in a country. The size of these effects is discussed in the next section.

Expenditure per student is a more sophisticated indicator with regard to the cost of education than the expenditure per GDP, as it takes into account the effect of youth population size and the participation rates. The table below shows the expenditure per student in secondary education. The Dutch score on this indicator is a little higher than the UK score, but considerably lower than the scores for Germany, Sweden and Belgium. On the other hand, the Netherlands is the only country showing a rise in expenditure per student over the 1990-1995 period.

Table 4.3: Expenditure per student (US dollars converted using PPPs)

	1990	1995
NL	4064	4351
D	6866	6543
S	---	5643
B	---	5770
UK	4456	4246

Data for 1990 are expressed in 1995 prices

Data for Germany relate to (the territory of) former West-Germany

Source: Education at a Glance 98 (p. 118-199)

Teacher salaries, workload, instruction time and number of students per teacher

In all countries the compensation of staff (mainly teachers) accounts for the largest part of the current expenditure on, but in Sweden the compensation of staff as a percentage of current expenditure is relatively low. The strong differences between 1994 and 1995 for Germany and Sweden may be due to definition changes.

Table 4.4: Compensation of staff as a percentage of current expenditure in primary and secondary education

	1992	1993	1994	1995
NL	81%	81%	79%	78%
D	---	87%	88%	76%
S	---	63%	63%	56%
B	83%	84%	84%	---
FL	---	---	---	86%
UK	76%	73%	71%	70%

Source: Education at a Glance 95 (p. 103), 96 (p. 80), 97 (p. 109), 98 (p. 129)

In "Education Policy Analysis 1997" (OECD) three factors are identified that affect the salary costs per student: teacher pay, teacher workload and teaching time per student. The next table shows the impact of each factor on the costs per student. The effects displayed express to what extent the cost per student would change if everything else remained the same. The figures are therefore somewhat hypothetical in character. Besides the effect of teacher pay is based on what teachers earn after 15 years experience. The age distribution of teachers and their experience will not be identical in each and every country. Such differences are not taken into account in the assessment of the effects. Note also that the figures relate to teacher salary costs per student. This is why the costs per student in Sweden are relatively low, whereas the Swedish expenditure on education is relatively high in most other respects.

Taking these caveats into account the following can be concluded. In the Netherlands the relatively high level of teacher salaries increases the costs per student to a considerable extent, but the high workload of Dutch teachers more than compensates for this. The relatively high total instruction time for students further reduces the costs per student in the Netherlands. In Belgium the salary costs per students are high, although teacher salaries are below those of the Netherlands. Students in Belgium spend long hours in small classes, even though each teacher has a relatively low workload. Especially the reported pupil teacher ratio in Belgium is very low. This is partly due to the fact that the Flemish pupil teacher ratio actually reflects the number of teachers per pupil that are paid for. Flemish teachers on sick leave are counted but also their substitutes. Teacher salaries in Germany are relatively high, but large classes produce medium costs per student. In Sweden salaries are relatively low. Teaching hours are short, but this is offset by a class size above average.

Table 4.5: Effects on teacher salary costs per student at the lower secondary level (US Dollars, converted using purchasing power parities)

	NL	D	S	FL	UK
Country average statutory salary cost per student	2091	2342	1658	3832	-
Level of statutory salary (after 15 years of experience)	+482	+624	-562	+158	-
Instruction supplied per teacher (hours)	-677	+28	+333	+4	-
Total teaching time per student (hours)	-103	-741	-430	+1500	-
Residual	+205	+247	+75	-13	-

Source: Education Policy Analysis OECD 1997, p. 23

The tables below show the developments in teacher salaries, teaching hours and instruction hours in the Netherlands, Germany, Flanders, Sweden and the UK. With respect to lower secondary education teacher salaries in the Netherlands in lower secondary are more or less average, but in upper secondary general they are the highest of all five countries. In the Netherlands teacher salaries have decreased over the 1990-1996 period relative to the per

capita GDP. In the UK teacher salaries increased over the same period. In Sweden there was neither a relative increase nor decrease, but in Flanders teacher salaries decreased as well.

Table 4.6: Teacher salaries after 15 years, Ratio per capita GDP

	<i>Lower secondary</i>		<i>Upper secondary general</i>	
	1990	1996	1990	1996
NL	1.6	1.5	2.2	2.1
D	--	1.8	--	1.9
S	1.2	1.2	1.2	1.2
FI	--	1.3	--	1.7
UK	1.5	1.6	1.5	1.6

Source: Education at a Glance 98 (p. 275)

With respect to the workload of teachers, three main aspects play a key role. The ratio of student to teachers, teaching hours and instruction time. The next three tables display the changes for these three aspects in the nineties.

Table 4.7: Teaching hours per year in public institutions

	<i>Lower secondary</i>		<i>Upper secondary general</i>	
	1996	Change 1990-1996 (1990 = 100)	1996	Change 1990-1996 (1990 = 100)
	NL	910	100	910
D	715	100	671	103
S	576	96	528	100
FL	741	---	657	---
UK	740	100	---	---

Source: Education at a Glance 98 (p. 284)

The number of teaching hours per year in the Netherlands is considerably higher than in the other four countries. This number has not changed for the Netherlands over the 1990-1996 period. In Germany the workload of the teachers in upper secondary education has increased slightly between 1990 and 1996. For Swedish teachers in lower secondary education it has decreased somewhat over the same period. With respect to intended instruction time and student teacher ratios, the information on changes over time is scarce. The intended instruction for 14-year-olds is virtually the same in Belgium and the Netherlands. In the other three countries it is considerably lower. The number of students per teacher in the Netherlands is considerably higher than in the other four countries. The Flemish pupil teacher ratio is not completely comparable to that of other countries.

Table 4.8: Intended Instruction time for 14-year olds in hours per year

	1994	1996
NL	1067	1067
D	960	921
S	828	741
FL	---	1069
UK		945

Source: Education at a Glance 96 (p. 140), 98 (p. 289)

Table 4.9: Number of students per teacher in lower and upper secondary education

	1995	1996
NL	--	18.6
D	14.9	15.0
S	13.5	13.7
FL	8.5	
UK	15.9	15.6

Source: Education at a Glance 96 (p. 140), 98 (p. 289)

Table 4.10: Summary of the findings with respect to structural differences

Teacher salaries	The Netherlands takes in a middle position with regard to teacher salaries in lower secondary education and a top position for general upper secondary education. Dutch teacher salaries have decreased as compared to per capita GDP over the 1990-1996 period. In Sweden teacher salaries remained stable as compared to per capita GDP and in the UK they increased slightly.
Student-teacher ratios and teaching hours	The students-teacher ratio in the Netherlands exceeds the ratios in the other four countries. Dutch teachers make more teaching hours than their colleagues in the other countries.

The main explanation for the relatively low expenditure on education in the Netherlands is the high workload of teachers (long hours and high student-teacher ratios). The available data do not show any sign of improvement in this respect in the nineties.

4.2.3 Policy

A rather popular interpretation for the low expenditure on secondary education in the Netherlands is that it results from the efficiency of the Dutch educational system. Proponents of this view like to point to the good results of Dutch students on international mathematics and science tests and similar results with regard to adult literacy. They tend to forget that in other respects the performance of the Dutch educational system is less flattering. The reading literacy of Dutch students in both primary and secondary education is below the international average. The pass rates in upper secondary education are below OECD average as well. It should be noted, though, that this last measure is rather crude from an educational perspective. There are many factors that may affect pass rates. Examples are redefinitions of upper secondary education (new ISCED levels), system reforms and changing examination standards.

The alternative interpretation is that secondary education in the Netherlands is profiting from past investments. In this view it is emphasised that Dutch expenditure on secondary education has decreased over the past decade(s). Empirical support for this assertion requires reliable data on educational expenditure over a long period. The investigations in some detail of the data on which (financial) indicators in OECD reports are based for the O-8 project show that the reliability of financial indicators is, in some respects, far from perfect especially when comparability across years is at stake. In any case, it is particularly difficult if not impossible to obtain time series on expenditure as a percentage of GDP for specific levels of education. Still there is some (weak) support for the idea of a delayed effect of educational expenditure on performance². It should be noted, though, that this evidence is based on pass rates in upper secondary education. Even for a crude measure like this the available time series do not go further back than the late eighties.

² J.S.M. Groot (1998), *Economische groei komt door goed onderwijs*, ESB 20-2-1998

In summary, the empirical support for the hypothesis that Dutch expenditure on education is low because of high efficiency is not very convincing. The educational performance of the Netherlands is above average in some respects but below average in other respects. Empirical data that may confirm or reject the hypothesis that the educational performance is mainly the result of high investment in the past are hardly available at present. In any case, both the efficiency and the delayed effect hypothesis need to be refined in order to explain diverging scores on different output measures.

4.3 Participation in secondary education

This section focuses on potential shortcomings in the international statistical data with regard to educational participation at the lower and general upper secondary level.

The tables below show the enrolment rates in secondary education for the population aged 15-19 and the (expected) size of this age group. The table shows that in all five countries a large majority of the population aged 15-19 is enrolled in secondary education, even though the difference between the country with highest and lowest enrolment is considerable in 96/97. The Netherlands taken in a middle position on this indicator.

Table 4.11: Net enrolment rates at age 15-19 in secondary education (based on head counts)

	96/97
NL	88.5%
D	87.9%
S	83.3%
FL	92.1%
UK	72.1%

Source: Education at a Glance 98 (p. 160)

Table 4.12: Number of people at the age of lower and upper secondary education

	Percentage of the population (1996)	Change (1996 = 100)	
		1990	2006
NL	6%	119	108
D	5%	98	106
S	6%	113	117
FL	6%	104	100
UK	6%	107	108

Source: Education at a Glance 98 (p. 61)

4.3.1 Coverage

Part-time students

If Dutch students follow part-time education at ISCED level 2 and 3 (mostly adults) they are included in the enrolment numbers for ISCED 2 and 3. If FTEs are required, each part-time student is counted as 0.5 FTE. This is of course no more than a rough estimation, possibly an overestimation for the Netherlands. In Sweden the number of full-time equivalents is based on the numbers of hours attended by a part-time student. In Flanders part-time students are counted as 0.5 FTE. Germany and the UK report no part-time students in lower and general upper secondary education.

Another problem with regard to adults following part-time education at ISCED 2 is that the courses are provided by “Regional Training Centers” which primarily provide upper secondary vocational education (ISCED 3). When student/teachers ratios are computed the teachers employed by the Regional Training Centers should partly be counted as lower secondary education teachers, but reliable data to do this are not available. Separate student/teacher ratios at ISCED 2 and 3 are therefore not provided. A similar problem exists in the UK, in that there are adults taught in further education colleges, which primarily provide ISCED 3 vocational education, on courses which are more appropriate to ICSED 2 level. All students and teachers in further education colleges, however, are reported at ISCED 3 vocational level. As a result, the volume of vocational upper secondary in the UK is slightly over-estimated and lower secondary education under-estimated. However, the student/teacher ratios ought to be correct.

4.3.2 Structural differences

Length of programme and enrolment

The relatively low position of the UK on the indicator can be explained by the relative short duration of the upper secondary programmes. Another important factor in this respect may be the fact that grade repetition in the UK is much less frequent than in Germany, Flanders and the Netherlands (see next section).

Another important factor is the relative size of the school age population. The table above shows the relative size of the population aged 15-19. This hardly differs between the five countries. Except for Germany, the relative size of the 15-19 year-olds in 1990 exceeded that of 1996 in each country. The expectation for the near future is that the relative size of the population aged 15-19 will increase in all countries except Belgium.

Time to complete and drop out

Participation rates may be either overestimated or underestimated. An example of an overestimated rate of participation in the case of secondary education may be grade repeating. An example of underestimated participation may be dropout. It is particularly difficult to obtain precise information on the amount of dropout in a country, especially if it is to be comparable across countries. For the moment we have to settle for relatively crude measures such as the percentages of students not enrolled at a particular age.

A little more information is available on the above mentioned example of overestimated participation, namely grade repetition. Grade repetition is forbidden in two countries to which this report relates: Sweden and the United Kingdom. The table below relates to students who participated in “TIMSS” (Third International Mathematics and Science Study). This study aimed at 13-year-olds. It shows the percentages of students at least 8 months older than the average in the grade concerned.

Table 4.13: Percentage “over aged” students (TIMSS sample 13-year-olds)

NL	18.6
D	16.8
S	3.3
FL	17.4
UK (Eng)	1.0

Source: Education Policy Analysis 1997 (OECD), p. 122

The data in the above table should not straightforwardly be interpreted as indicator of grade repeating in lower secondary education. They reflect in part the amount of grade repetition in primary education. Still, the countries that stand out because of low percentages “over aged” students are the countries where grade repetition is forbidden in secondary education. The scores of Germany, Flanders and the Netherlands in the above table are very similar. The table below provides a more detailed comparison of grade repetition in Flanders and the Netherlands. The figures are in line with those in the previous table in that the figures for both countries are quite similar.

Table 4.14: Grade repetition in Flanders and the Netherlands

Grade	Netherlands			Flanders		
	“Brugjaar”	VBO	MAVO	HAVO	VWO	
1	3.1%					3.4%
2	5.1%					5.6%
3	11.1%	7.9%	11.0%	7.6%	3.2%	7.3%
4		3.9%	7.4%	18.5%	10.7%	7.1%
5				9.1%	11.1%	9.2%
6					6.5%	3.6%

Source: Dutch ministry of education, culture and sciences

It seems that because of the differences in grade repetition between Sweden and the UK on the one hand and Germany, Flanders and the Netherlands on the other, the costs per student may also have some shortcomings as well. It needs to be mentioned, though, that in Sweden many students take an extra year in the “Grundskola”. Often this is necessary to meet the requirements for entering into further education. In England and Wales there is hardly any grade repetition either, but students enjoy a great deal of liberty in choosing the number and kind of examination subjects. Furthermore it is possible to take an examination at different levels.

Table 4.15: Students not enrolled (1995)

	Final legal compulsory schooling age	Typical graduation age, upper secondary	Not enrolled at:		
			Final legal compulsory schooling age	Age 17	Typical graduation age, upper secondary
NL	18	18-19	17.5%	6.7%	23.7%
D	18	19	15.7%	6.4%	34.6%
S	16	19	3.0%	4.2%	64.7%
FL	18	18-20	12.5%	-0.1%	22.9%
UK	16	16-18	13.1%	21.4%	44.4%

Source: Education Policy Analysis 1997 (OECD)

Students not enrolled may be used as a proxy for the example of underestimated participation. On two of the three measures the Dutch score is quite high (students not enrolled at the final legal compulsory schooling age; students not enrolled at age 17). The Dutch score is below average, however, if we look at the percentage of students not enrolled at the typical graduation age. The above data do not allow for a clear conclusion on the amount of drop-out in the Netherlands as compared to other countries. Each of the three measures is at best an approximation of real drop-out rates: the percentage of students leaving school without

qualification. The figures in the above table only relate to the numbers of youth not enrolled at a particular age.

4.3.3 Policy

A recent policy change in the Netherlands is the publication of school results (the so-called “kwaliteitskaarten” or quality charts first issued in 1998). For each general secondary school data are published with regard to aggregate examination scores, pass rates and the time students need to complete the curricula. This policy can be considered as an attempt to introduce market mechanisms into the field of education. At least three categories of argument in favour of publishing school results can be distinguished. First of all, information on school results may help parents in choosing a school for their children. In the second place this information may serve as an external check on the quality of education. If the results of a school are below standards, the school will have to account for that. Thirdly, public school results may serve as a basis for self-evaluation and school improvement.

In the UK school results on national exams have been published since 1992 both by the government and national newspapers. These are known as the “league tables” or “performance tables”. Their impact is believed to be considerable, but they have also been heavily criticised mainly because the presented figures have not been corrected for intake differences between schools. A negative side effect is that some schools may avoid admitting at-risk students. The need for information about the progress schools help pupils to make relative to their starting point has been acknowledged by the government. In 1998 the so-called “Value added pilot project” was started aiming to develop measures on the progress pupils make during their stay in secondary education. A similar project is now under way in the Netherlands. In Sweden examination results are published for lower secondary education. These are not corrected for intake differences between schools.

In Germany it is forbidden by law to publish school data on examination scores. Educational policy varies between the German federal states (Länder). Some have national exams (e.g. Bayern and Baden-Württemberg), but others (e.g. Nordrhein-Westfalen) do not have national examinations. In those federal states where national examinations are absent it does not seem very useful to publish school results anyway, as the data are hardly comparable across schools. In Flanders, school results are not published either. Just as in several of the federal states in Germany, Flanders has no national examinations.

4.3.4 Changes in the factors described above

Possible effects on expenditure in secondary education

+ means that expenditure might increase if this factor could be controlled for adequately.

- means that expenditure might decrease if this factor could be controlled for adequately.

	NL	D	S	B/FI	UK
Private Institutions	0	0	0	0	+
Transportation	-	0	0	0	0
Length of programmes	Impact varies depending on what part of secondary education a particular cost indicator relates to (e.g. only lower secondary or both lower and upper secondary; only general or both general and vocational secondary education)				
Teacher salaries	-	-	+	0	??
Instruction supplied per teacher	+	0	-	0	??
Teaching time per student	+	+	+	-	??

Possible effects on participation in secondary education

+ means that participation might increase if this factor could be controlled for adequately

- means that participation might decrease if this factor could be controlled for adequately.

	NL	D	S	B/FI	UK
Counting part-time students	-	0	0	-	0
Length of programmes	0	0	0	0	+
Time to complete (grade repetition)	-	-	-	-	??
Drop-out	??	??	??	??	??

4.4 Overview

Part-time students	Possible overestimation in the Netherlands and Flanders as each part-time student is counted as 0.5 FTE. In Sweden FTE's are based on hours attended. No part-time students reported in Germany and the UK Problems in both the Netherlands and UK with distinction between lower and upper secondary education for adult students.
Participation	Enrolment rates at age 15-19 in secondary education are relatively high in the Netherlands. Only the Belgian rates are higher.
Grade repetition	The amount of grade repetition in the Netherlands is similar to the situation Flanders and Germany. Although grade repetition hardly exists in Sweden, many students take an extra year before entering further education.
Students not enrolled	The available data do not allow for a firm conclusion on dropout rates in the Netherlands as compared to other countries.

Signs of the times

*Monitoring the position of Dutch
education: the O 8 project*

Stage two: digging deeper

Vocational education

5 Vocational Education

5.1 Introduction

This section provides a description of the structures of vocational upper secondary education in the five countries concerned: the Netherlands, Germany, Sweden, England and Flanders.

The Netherlands

Two types of vocational upper secondary education exist in the Netherlands, school-based (mbo) and work-based education (apprenticeship). From 1997 the school-based type of upper secondary vocational education is called *bol*, the vocational training track in upper secondary education. In this type of vocational education the practical component takes up between 20% and 60% of the total time spent in education.

The apprenticeship-system is called *bbl*, vocational guidance track in upper secondary education. In apprenticeship training at least 60% of all time is devoted to practical training. Apprenticeships thus combine on-the-job training with theoretical training. The theoretical training is taught on a day-release basis, mostly within a regional training centre (ROC), whereas practical training usually takes place within firms. The responsibility for organising the practical training therefore lies with the employer (Baaijens et al. 1998, p.13-14).

In both the school and work-based track four different levels can be distinguished with the following programmes (OCW 1996a, p.88):

- training to assistant level (level 1)
- basic vocational training (level 2; starting qualification)
- professional training (level 3)
- middle-management training (level 4)
- specialist training (level 4)

The second level of the qualification structure (basic vocational training) comes down to the starting qualification, which is regarded, as the minimum level needed to enter the labour market. The indicated duration in Figure 5.1 refers to the estimated course load of each programme. The actual course duration may change from individual to individual.

Figure 5.1: System of vocational upper secondary education in the Netherlands .

Age 16	Age 17	Age 18	Age 19
Middle management training (3-4 years)			
Assistant level (0.5-1 year)			
Basic vocational training (2-3 years)			
Professional training (2-4 years)			Specialist training (1-2 years)

Germany

The dual system of apprenticeships is the most important type of vocational education in Germany and leads to a full qualification in vocational education. In the dual system students visit a *Berufsschule* two days a week, and spend three days in a training firm. The federal government is responsible for the part of the education that takes place in the firm, whereas the school component is a responsibility of the *Länder*. Students conclude a training contract (*Ausbildungsvertrag*) with an individual firm for the duration of their education, and receive a training allowance. The only formal admission requirement for the dual system is completion of compulsory education. Firms however often require some level of preparatory training. Dual education takes at least 2 years, on average 3 years and at most 3.5 years (van Lieshout 1996, p.21-22).

The main goal of *Berufsvorbereitungsjahr* and *Berufsgrundbildungsjahr* is to prepare students for the dual system. Students with this or some other kind of relevant preparatory training have a shorter duration of dual education (van Lieshout 1996, p.25, 48).

Berufsfachschulen are in fact the only type of full time education that can lead to a full qualification in vocational education. However there are five types of *Berufsfachschulen*, of which only two lead to a full qualification. The other types prepare for the dual system or for an entrance qualification for higher education. In 1992 the two types leading to a full qualification had around 106.000 students (accounting for approximately 40% of the *Berufsfachschulen*). Therefore a majority of the *Berufsfachschulen* does not lead to a full qualification and cannot be compared to the Dutch mbo (bol, vocational training track) (van Lieshout 1996, p.26-29).

Most other full-time schools offer a combination of general and vocational education and provide the possibility to obtain an entrance qualification for higher education. However, these schools do not provide a real alternative to the dual system (van Lieshout 1996, p.25-26). Next to some types of the *Berufsfachschulen* these schools include *Fachgymnasien*, *Kollegschulen* (only in Nordrhein-Westfalen), *Berufsoberschulen* (only in Bayern), *Technische Oberschulen* (only in Baden-Württemberg), *Fachoberschulen* and *Berufsaufbauschulen* (Statistisches Bundesamt 1997, p.42)

Figure 5.2: System of vocational upper secondary education in Germany (ISCED 3)

Age 16	Age 17	Age 18
	Berufsschulen (dual system)	
Berufsvorbereitungsjahr		
Berufsgrundbildungsjahr		
	Berufsfachschulen	
	Fachgymnasien	
	Kollegschulen	
	Fachoberschulen	
	Berufs-/Technische Oberschulen	
	Berufsaufbauschulen	

Sweden

Sweden does not have a separate system of vocational education, but around half of the pupils in upper secondary education follow a vocational track. In the upper secondary school there are 16 nationally determined programmes, 14 of which are primarily vocationally oriented, and two preparing primarily for university studies. Furthermore, there is the possibility to follow a specially designed programme. Next to the core subjects this programme includes combinations from both theoretical and vocational subjects from two or more programmes (in the table this programme is included in the vocational programmes). Finally there is an individual programme, of varying length and content, for those unsure of what to study. After having studied in the individual programme the student may continue in one of the other programmes or in an apprenticeship training (Swedish Ministry of Education and Science 1996, p.239-240).

Upper secondary vocational education includes a lot of general subjects. It also gives a rather general and broad knowledge of vocational subjects. This means that a student from the vocational programmes is more a generalist than a specialist. According to the Swedish Ministry of education (1996, p.241) secondary education should only be seen as a first step in a process of lifelong learning.

Figure 5.3: System of upper secondary education in Sweden

Age 16	Age 17	Age 18
Gymnasieskolan		

Within the programmes containing vocational subjects, education combined with apprenticeship is an alternative route of study (Eurydice 1998b). The apprenticeship-training programme comprises vocational training organised by the employer as well as instruction in the upper secondary school (Swedish Ministry of education 1996, p.240)

In 1996 an experiment has started with a modern apprenticeship program. These new apprenticeships are to build a bridge between upper secondary school and working life. According to the OECD (1999, p.19) the apprenticeships take place within the individual programme in upper secondary school. According to Regeringskansliet (1998, p.15) it is organised in co-operation between upper secondary school, municipal adult education, higher education and companies. One third of the education is to take place at a workplace. Pilot activities have been gradually expanded and will provide 8 800 places in autumn 1998.

Flanders

Figure 5.4: System of upper secondary vocational education in Flanders

14	15	16	17	18	19	20
Technical education (second stage)	secondary	Technical secondary education (third stage)		Optional year		
Vocational education (second stage)	secondary	Vocational secondary education (third stage)		Vocational secondary education (fourth stage)		
				Optional year		
Artistic secondary education (second stage)		Artistic secondary education (third stage)		Optional year		
		Part-time vocational education		Optional year		

In accordance with the Decree of 31 July 1990 the new framework (also called 'unified structure') for secondary education in the *Vlaamse Gemeenschap* (Flemish Community) is composed of three stages of two years each. The first stage has a common curriculum for all pupils. Apart from general upper secondary education the second and third stage comprise three types of vocational education:

- Technical Secondary Education (Technisch Secundair Onderwijs, TSO). Attention is given mainly to general and technical-theoretic subjects. TSO prepares the youngsters for professional life or higher technical education. Practical courses are also included in the training.
- Vocational Secondary Education (Beroepssecundair Onderwijs, BSO). In this form, pupils acquire specific skills and simultaneously receive general education. Access to higher education is possible, but it is not common.
- Artistic Secondary Education (Kunstsecundair onderwijs, KSO). A general and broad development is linked with active practice. KSO prepares the youngsters for professional life or higher education.

Each stage consists of two years of studies and forms a unit of itself. At the end of the third stage of general academic, technical and arts secondary education, pupils may be awarded the Diploma of Secondary Education. Pupils may decide to follow an extra year for specialisation or preparation for higher education (Ministerie van de Vlaamse Gemeenschap 1997, p.11-12).

At the age of 16 (or 15 when having finished the first stage of secondary education) pupils may also follow part-time vocational secondary education (DBSO). This type of education is targeted at dropouts and pupils who want to combine part-time work with practical training. Courses are given in recognised centres for part-time education, which are linked to schools providing full-time secondary education (European Commission 1995, p.25; European Commission 1997a, p.37).

England

Figure 5.5: System of vocational upper secondary education in England

Age 16	Age 17
Further Education Colleges	
Vocational Training in Schools	
Modern Apprenticeships	
National Traineeships (former Youth Training)	

Further Education colleges offer both full-time and part-time programmes leading to vocational qualifications. The full-time programmes are considered here as vocational education, whereas the part-time programmes are considered as adult education (Atkinson 1999, p.11). Vocational training is also offered in secondary schools. For instance sixth form colleges offer a range of full-time courses aimed at vocational qualifications.

In 1995 government and industry introduced Modern Apprenticeships, which aimed at vocational qualifications (NVQ3) for 16 year-old school-leavers. However they are also open to older trainees until the age of 25. Most apprentices are employed by a firm and receive a salary. TECs largely pay for the costs of training outside the workplace, but this depends on local agreements between TECs and employer (Eurydice 1999b).

Since September 1997 National Traineeships offer work based training for young people aimed at NVQ-level 2. This program, which resembles the Modern Apprenticeships, replaces the Youth Training scheme (Eurydice 1999). Youth Training was mainly aimed at 16 and 17 year-olds, who are not in full-time education. It involved part-time education in a Training and Enterprise College (TEC) and part-time work in a company (Holt et al. 1997, p.7-7). In addition the TECs continue to provide training opportunities for young people who used to be covered by Youth training, but now fall outside the new work based schemes (Eurydice 1999b).

The different vocational routes are aimed at attainment of one of the following types of qualifications (DfEE 1998c; EU 1997a, p.63; Holt et al. p.7-9-10):

- General Vocational Qualifications (GNVQs): vocational qualifications in 15 subject areas aimed mainly at those in full-time education. These qualifications are broadly based, combining general and vocational education.
- National Vocational Qualifications (NVQs): job-specific vocational qualifications aimed mainly at those who have left full-time education. These qualifications consist of a number of units, which set out industry-defined standards of competence in particular occupations. Individuals are assessed against these standards largely by observation in the workplace. Five levels of NVQs can be distinguished:
 - Level 1-broadly equating to foundation skills in semi-skilled occupations;
 - Level 2-broadly equating to semi-skilled occupations;
 - Level 3-broadly equating to technician/ skilled/craft/supervisory occupations;
 - Level 4-broadly equating to technician/junior management occupations; and
 - Level 5-broadly equating to professional/ senior management occupations.
- Other vocational qualifications

The NVQ-framework is divided into 11 sectors of industry and commerce, within each of these areas qualifications are available at the various levels for most occupations.

The Qualifications and Curriculum Authority (QCA) is responsible for the comprehensive qualifications framework (including general educational qualifications). Aim of the framework is to broaden general qualifications and to upgrade vocational qualifications, based on rigorous standards and key skills. Furthermore the framework is supposed to offer greater flexibility between different educational routes.

5.2 Expenditure on vocational education as a percentage of GDP

International comparisons for expenditure on vocational education are not available. OECD Education at a Glance only provides combined figures for primary and secondary education. Although in the OECD-questionnaire on finance a further breakdown of expenditure to lower and upper secondary education is made, general and vocational education are not distinguished.

Nevertheless some information can be obtained from these OECD-figures, which are shown in Table 5.1. For instance private payments to primary and secondary education are practically non-existent in Sweden and Flanders and very small in the Netherlands, whereas Germany has a large share of private payments. These private payments in Germany are almost totally due to contributions of firms to the apprenticeship system (OECD 1998a, p.94-96). However, the private payments to educational institutions for the other countries are likely to refer to fees paid by students and are therefore not comparable to the German figure.

In addition Table 5.1 provides a general impression of expenditure for education, which is likely to be reflected in expenditure on vocational education as well. Looking at Dutch direct public expenditure it is clear that this is low compared to Sweden and England. However the differences with Flanders and Germany are not that large.

Further it is remarkable that further private payments (presumably pupils cost of living and travel costs) are high in Sweden, but also totally covered by public subsidies. However the large differences between some of the figures suggest different interpretations for some of the categories. This is confirmed by the empty boxes, which make clear that some of the statistics for educational expenditure in the five countries are not yet compatible. So even with OECD-figures at the aggregate level of primary and secondary education it is already clear that one should be cautious with comparing figures for different countries.

Table 5.1: Expenditure on primary and secondary education (OECD, as % of GDP), 1995³

	<i>NL</i>	<i>D</i>	<i>S</i>	<i>FL</i>	<i>Eng</i> ⁴
Direct public expenditure for educational institutions	3.00	2.90	4.40	3.40	3.80
Total public subsidies to households & firms (excluding allowances for student living costs)	0.10		0	0	0.03
Private payments to educational institutions	0.10	0.91	0.01		
Total expenditure for educational institutions	3.20	3.80	4.50		
Total expenditure (including public subsidies to households)	3.40	3.90	5.10		
Further private payments (other than to educational institutions)	0.26		0.61		0.03
Financial aid to students (not attributable to household payments to educational institutions for educational services)	0.19	0.11	0.61	0.01	0.03

³ OECD 1998, p.82.

⁴ United Kingdom

However, to take a closer look at vocational education, one has to compare national statistics. As far as these statistics are available they are even more difficult to compare, due to differences in the definitions used and in the methods of estimating costs. In particular data on private costs provide only very rough estimates.

Table 5.2 shows some estimates of public and private expenditure on vocational education. The types of vocational education included were described in section 1. Again Dutch public expenditure turns out below compared to other countries, except England. Only in Germany public expenditure is on the same level, but a high level of private expenditure supplements this. The figure for Flanders is remarkably high, especially compared to Table 5.1, whereas the English figure is remarkably low.

Table 5.2: Expenditure on secondary vocational education (as % of GDP, national statistics)

	<i>NL</i> ⁵	<i>D</i> ⁶	<i>S</i> ⁷	<i>FL</i> ⁸	<i>UK</i>
Public	0.39	0.42	0.60	0.79	0.28
Private		0.94			
Total		1.36			

5.2.1 Coverage

Participation

The number of participants is the main determinant for the level of total expenditure on vocational education. In this way Table 5.21 may largely explain the figures in Table 5.2. For instance the combination of a high share of vocational education high number of apprenticeships in Germany may explain the relatively low public and high private expenditure. Further the remarkably high expenditure for Flanders seems due to the large number of students in school-based vocational education. The other way round the figure for Sweden is lower than Flanders as a result of the lower share of vocational education. In fact, Table 5.3 shows that per pupil expenditure in secondary education does not differ much between Flanders and Sweden.

Table 5.3 gives an overview of per pupil expenditure. This indicator has the advantage that it is not influenced by large differences in the number of pupils following vocational education. It should be noted that the OECD figures shown in Table 5.3 refer to secondary education as a whole. Nevertheless Table 5.3 largely confirms the fact that the Netherlands have low costs of education. All countries except the UK spend a larger amount per pupil on secondary education.

Table 5.3 Expenditure per pupil (US dollars converted using PPP's) on public and private institutions in secondary education, 1995

	<i>NL</i>	<i>D</i>	<i>S</i>	<i>FI</i>	<i>UK</i>
Per pupil expenditure	4351	6254	5643	5770	4246

⁵ 1997: Calculation based on gross expenditure on secondary vocational education (excluding costs of study allowances and buildings), as a percentage of GDP (OCW 1999).

⁶ 1997: Cost of apprenticeship. Data provided on request by Statistisches Bundesamt.

⁷ 1996/1997: Calculation based on share of pupils in vocational programmes, times total expenditure in Gymnasieskolan. OECD 1998b; Statistics Sweden 1998, p. 84, 92-97.

⁸ 1995: Calculation based on average per pupil expenditure in secondary education times the number of pupils in vocational secondary education (in 1996/97).

In- or exclusion of certain expenditures (PM)

Other explanations for cost-differences might be the in- or exclusion of the costs for transport, school-meals (included in Sweden), premiums paid for pensions and buildings. Again due to a lack of specific statistics the importance of these explanations cannot yet be tested for vocational education.

Private payments (PM)***Public subsidies to households (PM)******Private institutions (PM)*****5.2.2 Structural differences*****Differences in length of programmes***

To some extent differences in expenditure on vocational education may be explained by differences in the duration. However, this is made difficult by a lack of exact figures on average duration. On the other hand the structures of vocational education show some clear variation: from short two-year courses in England and Germany to long courses of 4-7 years in Flanders. With an average duration around three years Sweden and the Netherlands are somewhere in-between. These differences in duration may also show up in the number of participants, but expenditures may be higher if both general and vocational courses are longer.

Work based versus classroom based learning

The participation in work-based education in the Netherlands is higher than in Flanders, England and Sweden, but lower than in Germany (see Table 5.21). Assuming that the public costs of work-based education are lower than school-based education, expenditure in Germany should be underestimated, and expenditure in Flanders, England and Sweden overestimated.

Unfortunately we do not have information on the exact cost difference between school-based and work-based education, although it is clear that private contributions to dual systems seem to be substantial. (For instance in the form of apprenticeship wages, as shown in Table 5.4) Dutch apprenticeship wages are slightly lower than in Germany, but far higher than the apprenticeship wages in England and Flanders.

Table 5.4: Apprenticeship wages (estimates in ECU)⁹

	NL	D	S	Fl¹⁰	Eng
Monthly wages	594	519		299	195

Level of programme (PM)***Cheap and expensive programmes (PM)***

Information on the cost differences between programmes is only available for Sweden. Average costs per pupil range from 55.000 SEK¹¹ in the childcare and leisure programme to around 125.000 in the natural resource use programme. Most vocational programmes cost around 80.000 SEK per pupil, whereas for comparison most general programmes cost around 50.000 to 55.000 SEK.

⁹ European Commission 2000, p.113.

¹⁰ Belgium.

¹¹ One SEK is equal to around f0.25.

Part of these cost differences can be related to class sizes, as programmes with many participants are cheaper. Further some vocational programmes, like natural resource use and industry, require special equipment which makes those programmes more expensive (Skolverket 1998).

Differences in teaching costs

Table 5.5 makes clear that Dutch vocational teachers are relatively well paid in comparison with teachers in Sweden and Belgium. However, in Germany teacher pay is considerably higher, especially when the number of teaching hours is taken into account. Unfortunately no data are available for England, although in general education salaries are slightly higher than in Sweden.

Two remarks should be made here. First, real salaries may differ from the statutory salaries in the table, as schools have some leeway in determining individual pay. Second, the level of pay in other occupations in the same country may be more relevant for the choice of a teaching career.

Table 5.5: Teachers' salaries in upper secondary vocational education, in equivalent US dollars using PPP's (1996)

	<i>NL</i>	<i>D</i>	<i>S</i>	<i>Fl</i> ¹²	<i>Eng</i>
Starting salary	24 706	32 992	18 277	23 426	
Salary after 15 years	38 388	41 081	23 354	33 747	
Salary at top of scale	44 882	47 503		40 753	
Salary after 15 years relative to per capita GDP	1.8	1.9	1.2	1.5	
Salary after 15 years per teaching hour	43	61	38	35	

As shown in Table 5.6 only teachers in Belgium have to supply more teaching hours. The workload for teachers is much lower in Sweden and Germany. Figures for England are missing, but the number of teaching hours in English lower secondary education is somewhat higher than in Germany.

Table 5.6: Number of teaching hours per year in upper secondary vocational education (1996)

	<i>NL</i>	<i>D</i>	<i>S</i>	<i>Fl</i> ¹³	<i>UK</i>
Number of teaching hours	900	676	612	953	
Change between 1990 and 1996 (1999=100)	99	101	93		

The student-staff ratio in Table 5.7 shows that Dutch teachers have more pupils to take care of. However, this student-staff ratio is not the same as class size because instruction and teaching time and teaching practices may vary between countries, as shown in the number of teaching hours. For instance a country with a high number of teaching hours and a high student-staff ratio may have the same class-size as a country with a low number of teaching hours and a low student-staff ratio.

Table 5.7: Ratio of students to teaching staff (fte) in all secondary education (1996)

	<i>NL</i>	<i>D</i>	<i>S</i>	<i>Fl</i> ¹⁴	<i>Eng</i>
Student-staff ratio	18.6	15.0	13.7		15.6

¹² Belgium.

¹³ Belgium.

¹⁴ Belgium.

Population density

School expenditure also depends on school size, as economies of scale can be achieved by increasing school size up to a certain level. Therefore countries with a low population density are incurring higher costs per pupil. From a comparison of the number of inhabitants per square kilometre in Table 5.8 it is clear that Sweden has the lowest population density. On the other hand the Netherlands and Flanders benefit from a relatively high population density.

Table 5.8: The number of inhabitants per square kilometre (1995)

	<i>NL</i>	<i>D</i>	<i>S</i>	<i>FI</i> ¹⁵	<i>Eng</i>
Inhabitants per sq. km.	379	229	20	332	239

Funding mechanisms

In recent years funding has been decentralised in most of the countries involved in this study. Even in Germany, the only country that until now does not have some kind of lump sum distribution, there is a trend towards more financial autonomy for schools and local authorities. In most of the countries Funding mechanisms are directly related to the number of pupils. Assuming that this kind of lumpsum funding is more efficient German expenditure would be overestimated. Recently the Netherlands and England have also taken the output of vocational schools into account.

Table 5.9: Funding mechanisms for vocational education

	<i>NL</i>	<i>D</i>	<i>S</i>	<i>FI</i>	<i>Eng</i>
Input	X		X	X	X
Output	X				X
Lump sum distribution	X		X	X	X
Claim		X			

5.2.3 Policy (PM)

In this section funding mechanisms and funding policies of the five countries are discussed. Furthermore, estimates of vocational expenditure are calculated on the basis of national statistics.

The Netherlands

Since 1993 institutions for vocational secondary education receive a lump sum grant per pupil from the central government (Baaijens et al. 1998, p.132). From the year 2000 lump sum funding is based on both the number of pupils and the number of graduates (OCW 1999)

Further in 1996 the government introduced a tax facility for firms employing apprentices. In 1998 an employer could receive a yearly tax deduction of 4.610 for each full-time apprentice. The budget for this arrangement was 375 million guilders in 1998 (Waterreus 1999, p.12).

On basis of these figures it is possible to get a rough estimate of the private costs of apprenticeships for firms. Around 80.000 full-time apprentices can be subsidised from this amount which results in yearly wage costs for employers between 600 million and 2.1 billion guilders (depending on the age of the apprentice)¹⁶. Part of the costs for firms are subsidised

¹⁵ Belgium.

¹⁶ Calculation based on monthly minimum wage of 666 guilders for 15-year olds to 2220 guilders for those 23 and over in 1997 (OCW 1997, p.7).

by sectoral training funds, these contributions (which are paid for by all firms in a sector) could be estimated at around 250 million guilders in 1996 (Waterreus 1997). Furthermore these wage costs are partly offset by production of the apprentice.

In 1991, on request of the Dutch employers' organisation, the total private costs of apprenticeships were estimated at 3.6 billion, of which 2 billion for the wages of apprentices. However these costs were almost completely compensated by direct benefits of 3.3 billion (BEA 1991).

Table 5.10 shows the direct public expenditure as a percentage of GDP in 1997. Next, the development of the public costs per pupil between 1994 and 1998 is shown in Table 5.11.

Table 5.10: Public expenditure on vocational education as a percentage of GDP (in f) 1997¹⁷.

Public expenditure on vocational education	2778 million
Gross domestic product	705400 million
Expenditure on vocational education as a percentage of GDP	0.39%

Table 5.11: Public costs per pupil in Dfl. (x1000) 1994-1998¹⁸

	1994	1995	1996	1997	1998
School expenditure per pupil	7.4	7.7	8.1	8.3	9.3
Study allowance per pupil	4.2	3.9	4.0	4.8	4.7

Germany

Public school attendance is free. School funding is divided between the *Länder* and the local authorities (*Kommunen*). On average the *Länder* pay 80% of the costs, while local authorities pay the remaining 20%. The former are responsible for paying teachers' salaries, whereas the latter pay for non-teaching staff and material costs. Certain expenditures of the local authorities are reimbursed from the *Länder*, like the costs of school transport. When schools have catchment areas beyond the local area the Land usually bears all the costs (Eurydice 1999a, p.82,83).

The Land or the local government directly pays costs; therefore schools have no budgets for personnel expenditure. However some communities do provide schools with budgets for material expenditure, which gives them more freedom in the allocation and timing of their expenditure.

Approved private schools (*Ersatzschulen*) receive a subsidy of 90% of their standard costs from the Land. These schools have to fulfil the same requirements as public schools. They are only allowed to demand voluntary fees for specific expenditures. Most of the private schools are religious schools which also fund schools from their own means, to keep fees low (Eurydice 1999a, p.83).

Other private schools (*Ergänzungsschulen*) do not receive public subsidies. These schools have different curricula from approved education and are not under state control. They are able to finance themselves by demanding fees.

In the dual system the *Länder* pay for the part-time education in vocational schools, whereas training firms account for the other costs. These other costs include the apprenticeship-allowances and the costs on-the-job training. The apprenticeship allowances are generally set

¹⁷ OCW 1999.

¹⁸ OCW 1999.

in collective sector agreements (Kath 1998, p.38). Table 5.12 shows the expenditure by firms on these 'other costs' in Germany.

Table 5.12: Private costs of apprenticeship, as a percentage of GDP¹⁹

	1995	1996	1997
Private expenditure	0.94%	0.91%	0.89%

In practice the state is also involved in financing part of these other costs. These state expenditures are especially targeted at small and medium-size enterprises. For instance inter-firm vocational training centres are subsidised (Kath 1998, p.39). However, as a percentage of GDP public expenditure for this purpose can be neglected as it only amounted to around 300 million DM, or less than 0.01% of GDP in recent years (Hummelsheim & Timmermann (1999, p.34).

Further, especially in the large construction sector, inter-company equalisation of training costs is laid down in collective agreements (like the sectoral training funds in the Netherlands). In addition all firms in certain regions pay compulsory levies to regional training funds (Kath 1998, p.39). Revenues of these training funds amounted to 1.3 billion DM in 1994, or 0.04% of GDP (Hummelsheim & Timmermann (1999, p.36).

Table 5.13 gives an overview of the public expenditure on all vocational schools (part-time and full-time). These costs amounted to over 15 billion-DM in 1997. No separate information is available on public expenditure for part-time vocational schools. Vocational schools are mainly funded by the Länder (80%), the other 20% is provided by local authorities (Hummelsheim & Timmermann (1999, p.36).

Table 5.13: Public expenditure on vocational schools (in billion DM)²⁰.

	1995	1996	1997
Public expenditure	14.7	15.0	15.2
GDP	3442.8	3523.5	3624.0
Public expenditure (as % GDP)	0.43	0.43	0.42

Table 5.14 shows that expenditure on vocational education, as a percentage of GDP, decreased between 1995 and 1997. However this decrease cannot be attributed to a change in the number of participants (see section 3.3). Private expenditures account for around 70% of all expenditures, whereas only the remaining 30% refer to public costs. However, public expenditure is becoming more important, as in particular the private contribution that is declining as a percentage of GDP.

Table 5.14: Public and private expenditure on vocational education, as a percentage of GDP²¹

	1995	1996	1997
Costs of public schools	0.43	0.43	0.42
Costs of private schools	0.05	0.05	0.05
Private costs of apprenticeships	0.94	0.91	0.89
Total costs	1.42	1.39	1.36

¹⁹ Data provided on request by Statistisches Bundesamt.

²⁰ Data provided on request by Statistisches Bundesamt.

²¹ Data provided on request by Statistisches Bundesamt.

Sweden

Municipalities are responsible for the funding of secondary education. In 1993 the system of earmarked state grants replaced by general lump sum grants. Since then local authorities are free to decide which share of their budget they allocate to education. Municipalities get most of their revenues from local taxes. In 1996 a new system of redistribution of local tax revenues between municipalities was introduced. Aim of this new system is an equalisation of both revenues and expenditures.

Revenues from municipalities with an above average per capita income are redistributed to municipalities with a below average per capita income, to adjust for income inequality between municipalities (Häggroth et al. 1999, p.83-84).

To compensate for differences in structural costs between municipalities, a further equalisation is carried out. This redistribution is determined by factors that are taken to express differences of need for expenditures on local public activities. For *Gymnasieskolan* these factors are the age structure of the population, boarding supplements and study program preferences. On the basis of these factors an imaginary calculation is made of the expected costs of education. Then the difference with the national average is the point of departure for equalisation (Häggroth et al. 1999, p.85-86; Ministry of Finance 1995, p. 4-6).

Apart from these redistribution arrangements the national government pays a general lump sum. The lump sum amount is determined on the basis of the number of citizens and the age structure of the population. Municipalities with many children and elderly receive extra money (Häggroth et al. 1999, p.84-87).

However, the lump sum only amounts to a small share of the total budget of local governments (14% in 1998). Local taxes are the most important source of income for municipalities with 59% of the budget. Other important sources of income are individual contributions (12%) and specific national grants (5%). However, the individual contributions for education are only 1% of the local expenditures on education expenditures (Häggroth et al. 1999, p.76, 87).

Each municipality is free to determine the shape and size of the budget of its schools. Most municipalities pay schools a fixed amount per pupil plus an earmarked amount for specific purposes. On average schools can freely dispose of 60-70% of their budget, but this varies from less than 50% to more than 95% (OECD 1995b, p.126).

Although information is available for the costs of *Gymnasieskolan* as a whole, no breakdown is made of the costs for vocational programmes. Therefore Table 5.15 only provides a rough estimate of the expenditure on vocational education in Sweden. It is a simple calculation based on the share of pupils in vocational programmes, times the total expenditure on upper secondary education in 1997. Unfortunately the GDP-figure used dates back from 1996, which might give a slight overestimation of costs. However, it is more likely that this figure still underestimates the costs, as vocational programmes usually are more expensive than general programmes.

Table 5.15: Estimated expenditure on vocational education in Sweden (in SEK)²²

Total expenditure on <i>Gymnasieskolan</i> (1997)	19914 million
Estimated expenditure on vocational education (share 96/97)	10057 million
Gross domestic product (1996)	1688200 million
Expenditure on vocational education (as a percentage of GDP)	0.60%

Flanders

Since 1998 all schools in secondary education receive an overall number of teacher periods that reflects the number of pupils. Further all schools receive a lump sum budget for operating and equipment costs, also depending on the number of pupils. However, per pupil publicly funded private schools only receive 76% of the operating resources of public schools. One of

²² OECD 1998b; Statistics Sweden 1998, p. 84, 92-97.

the main reasons for this difference of 24% is that public schools have more pupils from disadvantaged backgrounds (Eurydice 1999c).

No recent figures are available on private contributions to vocational education. However in 1988 private contributions amounted to only 1% of total expenditures (Oerter & Lauterbach 1995). Neither is a breakdown of public costs for vocational education available. Table 5.16 therefore gives a rough estimate of the expenditure on vocational education in Flanders. It is a simple calculation based on the number of pupils in vocational education times the per pupil expenditure in secondary education in 1995. Unfortunately the number of pupils dates from the year 1996/97. Again this figure might underestimate the real costs, as general education tends to be cheaper than vocational education.

Table 5.16: Estimated expenditure on vocational education in Flanders (in BF)²³

Per pupil expenditure on secondary education (1995)	221888
Estimated expenditure on full-time vocational education	38165 million
Gross domestic product (1995)	4801300 million
Expenditure on vocational education as a percentage of GDP	0.79%

England

The Further Education Funding Council (FEFC, England) was established in 1993 to provide for students in 446 further education sector colleges and sixth form colleges, with a budget of £3 billion. In each area the local FEFC is responsible to offer adequate facilities for 16-18 year old full-time students. Usually no fees are charged for this group (DfEE 1998c).

The FEFC provides each institution with a block grant of recurrent funding every year. The funding mechanism consists of a certain fixed amount to guarantee some stability and an element of marginal funding which depends on the performance of institutions. Each institution and the FEFC reach an agreement on the amount of education that is provided in return for the received subsidy. If provision falls below an institution's target, funding may be reduced. In addition further education institutions may attract extra income from fees for education and training of adults (Holt et al. 1997).

The Department of Education and Employment of the United Kingdom does not have any expenditure figures relating to vocational training (GNVQs) in schools. Only expenditure information for schools overall is collected. Some information is available on the unit costs of further education, as shown in

Table 5.17. However, these figures include the costs of both full-time and part-time students.

Table 5.17: Unit costs/funding per FTE-student in further education (£ in real terms) 1994/95-1996/97²⁴

	1994/95	1995/96	1996/97
Further Education Funding Council (FEFC)	3220	3010	2920

Also no expenditure data for Modern Apprenticeships and National Traineeships are available separately. Nevertheless table 2.3h identifies the combined expenditure on Youth Training, Modern Apprenticeships, National Traineeships and other Training.

²³ OECD 1998a, p.373; Ministerie van de Vlaamse Gemeenschap 1997, p.661.

²⁴ DfEE 1998b, p.13.

Table 5.18: Public expenditure on Youth training, Modern Apprenticeships, National Traineeships and other training (in millions of pounds)²⁵

	1997/1998	1998/1999	1999/2000
Public expenditure	740	741	861

Atkinson (1999, p.24) estimated total expenditure on initial vocational training at 1774 million pounds in 1996/97, or 0.30% of GDP (see Table 5.19). This figure could be even lower as the GDP of England would be underestimated when GDP per capita in England is higher than in the rest of the UK.

Table 5.19: Estimated expenditure on vocational education (in £)²⁶

Estimated expenditure on vocational education (1996/97)	1774 million
Estimated gross domestic product (1996/97)	639912 million
Expenditure on vocational education (as a percentage of GDP)	0.28%

5.2.4 Overview

Table 5.20: Overview of possible explanations of differences in indicator scores and their relevance in the five countries

	Netherlands	Germany	Sweden	Flanders	England
Expenditure (ind score)	4	3	2	1	5
Participation	+	+	-	+	
In-/ exclusion	PM	PM	PM	PM	PM
Priv. payments	PM	PM	PM	PM	PM
Public subs. Households	PM	PM	PM	PM	PM
Priv. institutions	PM	PM	PM	PM	PM
Length of progr.				+	-
Work-based		-	+	+	+
Level of progr.	PM	PM	PM	PM	PM
Price of progr.	PM	PM	PM	PM	PM
Costs of teaching		+			
Density of population	-		+	-	
Funding mechanism		+			
Dynamic	PM	PM	PM	PM	PM
GDP	PM	PM	PM	PM	PM
Price of progr.	PM	PM	PM	PM	PM

-: the results are underestimated: the score of this country should be higher in comparison to the other countries

+: the results are overestimated: the score of this country should be lower in comparison to the other countries

²⁵ Data provided on request by DfEE.

²⁶ Calculation based on population share of England in United Kingdom in 1996: 49.1 mln / 58.8 mln = 0.83, times UK GDP of 766330 millions of pounds leaves estimated GDP of 639912 million pounds (Atkinson 1999, p.24; DfEE 1999, p.12; GSS 2000).

- Public expenditure on vocational education as a percentage of GDP is low compared to the other countries except England.
- Participation in vocational education is high compared to the other countries, though slightly lower than in Germany.
- The average duration of vocational education is not very different from most other countries. Flanders has a longer duration, whereas England only provides short courses.
- The participation in work-based education in the Netherlands is higher than in Flanders, England and Sweden, but lower than in Germany. Assuming that the public costs of work-based education are lower than school-based education, expenditure in Germany should be underestimated, and expenditure in Flanders, England and Sweden overestimated.
- The costs per teaching hour in the Netherlands are at the average level. Teaching costs in Germany are very high, and a cause for overestimation of German expenditure.
- The population density in the Netherlands is very high, and therefore Dutch expenditure is underestimated in comparison to other countries.
- Dutch vocational education is funded by lump sum grants based on both input and output. So far only England uses output criteria as well, but all other countries except Germany use lump sum funding. Assuming that lumpsum funding is more efficient this indicates that German expenditure is overestimated.

5.3 Participation

Table 5.21 gives an overview of the enrolment in upper secondary vocational education, as a percentage of total enrolment in upper secondary education. Especially in the Netherlands and Germany pupils relatively often take part in vocational education. In Sweden a sharp decline seems to have taken place, but this may be due to the reform of upper secondary education, and a change of definition between 1994 and 1995. In Flanders a reform or a change of definition of vocational secondary education has caused a sharp increase in the participation rate. All in all, apart from a decline in Germany, participation in vocational education looks quite stable in most countries.

Table 5.21: Enrolment in vocational and technical programmes, as a percentage of total enrolment in upper secondary education (OECD)²⁷

	1992	1994	1995	1996
NL	70	70	70	70
D	80	78	77	76
S		63	53	51
FI (B)	59	68	68	68
Eng (UK)	58	58	58	57

Table 5.22 shows, in all countries but the United Kingdom, that men participate more often in vocational education than women. In 1994 girls in Sweden more often followed vocational courses, but in 1995 a change of definition seems to have taken place. This may be due to the reform of upper secondary education.

²⁷ OECD 1995, p.138; OECD 1996, p.123; OECD 1997a, p.157; OECD 1998a, p.169.

Table 5.22: Percentage of women among enrolment in vocational upper secondary education (OECD)

	1994	1995	1996
NL	46	47	46
D	48	47	47
S	59	45	45
FI (B)	48	48	48
Eng (UK)	53	53	54

Female enrolment in vocational education is not a very informative indicator because vocational education in most countries comprises both male- and female –dominated sectors. Therefore female enrolment by sector would be more informative on male/female-selectivity in vocational education. However, the OECD-data do not allow this distinction to be made.

National statistics do provide some information on this issue. As expected women are clearly underrepresented in the technical sector and in work-based education. Dutch statistics show for instance that the percentage of females in vocational programmes varied from 16% in engineering to 86% in service and health in 1997/98²⁸. However it is difficult to make a direct comparison because sectors are defined differently in different countries.

5.3.1 Coverage

Types of institutions (PM)

Types of programmes (PM)

5.3.2 Structural differences

Length of programmes

See section 5.2.2.

Time to complete (PM)

Mode of enrolment: school-based versus work-based programmes

In Table 5.23 participation is split into school-based and work-based programmes, which make clear important differences between the countries. Sweden does not have combined school and work-based programmes, apart from a small number in a new experiment. On the other hand in the Netherlands apprenticeships account for one third of vocational education, whereas in Germany they even account for two-thirds. Further in the Netherlands a shift from work-based to school-based education has occurred. A decreasing share of apprenticeships causes the vocational decline in Germany, from 55% in 1994 to 52% in 1996.

However, recent figures from national statistics indicate that the number of German and Dutch apprentices has increased again. The number of modern apprenticeships in England is also increasing, but this is replacing other forms of training. On the other hand participation in vocational programmes in Sweden has decreased somewhat further, to just below 50%. More information on the number of participants from national statistics can be found in the country sections.

²⁸ Data provided on request by Statistics Netherlands.

When we assume that work-based programmes are more vocationally oriented, the share of vocational education tends to be overestimated in countries lacking apprenticeships like Sweden, England and Flanders.

Table 5.23: Enrolment in school-based and work-based programmes, as a percentage of total enrolment in upper secondary education (OECD)²⁹

	School-based programmes			Work-based programmes		
	1994	1995	1996	1994	1995	1996
NL	45	47	47	25	23	23
D	23	24	24	55	53	52
S	63	53	51			
FI (B)	65	65	65	3	3	3
Eng (UK)	58	58	57			

Practical component

On the other hand differences between the vocational categories of school-based and work-based education need not be that large, as shown in Table 5.24. On the other hand the differences within the two categories are remarkable. Most striking is that school-based education in the Netherlands, as well as in Sweden and to a large extent in Flanders has a practical component, whereas in Germany and England no practical component exists outside the apprenticeship system.

The practical component in school-based education in the Netherlands may even be higher than in work-based education in some other countries. Therefore participation in vocational education may be underestimated in the Netherlands, when school-based education is thought of as less vocationally oriented.

Table 5.24: Practical component in school-based and work-based vocational education³⁰

	School-based	Work-based
NL	20-60	60-80
D	0	60
S	15	(33)
FL	0-25	25-90
Eng	0	25-75

5.3.3 Policy

This section gives an overview of detailed national statistics of participation in vocational education for the different countries.

The Netherlands

Table 5.25 shows that, in spite of a slight decline in the latter years, the number of participants in full-time upper secondary education has been quite constant in recent years. This might be explained by a shift of pupils to the apprenticeship system, as table 3.3b shows that after years of decline the number of apprentices has grown since 1996. The most likely explanation for this increase is a combination of increasing shortages of skilled labour and low interest rates. Stevens (1994) has shown that these factors are important for the attractiveness of apprenticeship system.

²⁹ OECD 1995, p.138; OECD 1996, p.123; OECD 1997a, p.157; OECD 1998a, p.169.

³⁰ European Commission 1997a; Baaijens et al. 1998, p.13-14; van Lieshout 1996, p.21; Regeringskansliet 1998, p.15; Swedish Ministry of Education 1996, p.241.

Due to these economic changes it is difficult to assess the impact of the introduction of the tax facility for apprenticeships.

Table 5.25: Number of participants in full-time upper secondary vocational education (bol, vocational training track) in the Netherlands, by sector 1991-1998 (x1000)³¹

	1991	1992	1993	1994	1995	1996	1997	1998
Engineering	90.3	88.7	88.0	88.1	86.9	86.0	86.2	
Economics	102.8	100.4	98.6	97.5	95.2	90.5	96.4	
Service & Health	62.1	63.9	67.3	70.8	72.7	74.6	79.3	
Agriculture	15.0	14.9	16.3	16.8	16.8	16.7	16.7	16.5
Other	14.2	14.5	15.3	16.6	17.1	17.4	4.9	
Total	284.4	282.6	285.2	289.8	288.7	285.1	283.6	275.1

Table 5.26: Number of participants in apprenticeships (bbl, vocational guidance track) in the Netherlands, by sector 1991-1998 (x1000)³²

	1991	1992	1993	1994	1995	1995	1996	1997	1997	1998
Engineering	77.5	76.2	77.4	76.1	75.9	-	67.2	68.3	-	
Economics	31.1	30.1	28.8	29.9	30.0	-	24.4	25.6	-	
Service & Health	18.8	18.3	17.0	15.0	13.5	-	11.2	13.1	-	
Agriculture	8.5	8.8	8.5	8.5	8.2	8.2	7.6	7.9	7.9	8.1
Total	135.8	133.4	131.7	129.5	127.6	115.6	110.4	115.0	127.5	130.8

Germany
As

shown

in

³¹ Years refer to school years (1998=1998/99 etc.); CBS 1998, p.137; CBS 1999, p.77-78.

³² Years refer to school years (1997=1998/99 etc.); Number of participants measured over complete school years from 1990-1995, number of participants measured at reference date from 1995, in-service education included from 1997. CBS 1998, p.140-141; CBS 1999, p.77,79-80.

Table 5.27 the number of participants in upper secondary vocational education has been quite stable in recent years. Although some shifts can be observed between different types of vocational education, most of these are caused by changes of definitions.

Table 5.27: Number of participants (x1000) in upper secondary vocational education in Germany (1992-1997)³³

	1992	1993	1994	1995	1996	1997
Berufsschulen (dual system) ³⁴	1678.8	1613.7	1563.9	1556.4	1625.4	1652.5
Berufsvorbereitungsjahr	37.2	46.5	51.7	55.5	65.3	66.4
Berufsgrundbildungsjahr ³⁵	80.5	95.2	98.1	101.2	40.0	40.2
Berufsfachschulen ³⁶	263.6	285.5	295.0	306.7	330.0	366.6
Fachgymnasien ³⁷	151.8	158.5	165.6	168.9	171.6	175.9
Fachoberschulen	75.5	76.9	78.0	78.3	81.7	82.3
Berufs-/Technische Oberschulen ³⁸	5.3	4.5	3.9	3.9	3.7	7.7
Berufsaufbauschulen	6.6	5.6	4.7	3.7	2.9	2.6
Total	2299.3	2286.4	2260.9	2274.6	2320.6	2394.2

Sweden

³³ Statistisches Bundesamt Deutschland 1999.

³⁴ Including part-time students in Berufsgrundbildungsjahr from 1996 onwards.

³⁵ Only full-time students from 1996 onwards.

³⁶ Including students in Schulen des Gesundheitswesen in Sachsen from 1997 onwards.

³⁷ Including students in Kollegschulen.

³⁸ New definition of schooltype in Bayern from 1997 onwards.

Table 5.28 shows the number of participants in the different programmes of upper secondary education. A slight decline in the share of pupils in vocational programmes can be witnessed. In addition some trends in the choice of vocational programmes can be observed. An increasing number of pupils are choosing specially designed programmes, and for media and the catering industry.

Table 5.28: Participants in upper secondary education (Gymnasieskolan) in Sweden, by programme 1994/95-1997/98³⁹

	<i>Number of participants (x1000)</i>			
	<i>94/95</i>	<i>95/96</i>	<i>96/97</i>	<i>97/98</i>
Art	9.3	13.2	14.5	14.9
Business and administration	14.6	18.1	17.3	16.3
Child care and leisure	17.6	21.8	21.4	19.3
Construction	5.9	8.1	7.7	6.9
Electricity	10.4	13.7	13.7	13.7
Energy	2.2	2.6	2.4	2.5
Food	1.5	2.0	2.2	2.2
Handicrafts	2.8	3.7	4.0	4.1
Health care	13.9	13.8	12.4	11.3
Hotel, restaurant and catering	8.9	12.3	13.4	14.1
Industry	6.0	8.2	8.6	8.1
Media	5.6	8.6	10.0	10.2
Natural resource use	6.3	6.8	6.9	7.0
Vehicle engineering	8.5	11.6	12.1	12.1
Specially designed programmes	2.0	4.9	8.1	11.6
<i>Subtotal vocational programmes</i>	<i>115.5</i>	<i>149.3</i>	<i>154.7</i>	<i>154.1</i>
Natural sciences	33.3	50.8	57.7	61.8
Social sciences	53.5	76.4	77.7	77.7
Individual programmes	15.9	17.2	16.0	15.7
<i>Subtotal of general programmes</i>	<i>102.7</i>	<i>144.5</i>	<i>151.4</i>	<i>155.2</i>
Total	218.2	293.8	306.1	309.3
<i>Vocational programmes as a percentage of total</i>	<i>52.9</i>	<i>50.8</i>	<i>50.5</i>	<i>49.8</i>

*Flanders*Table 5.29: Number of participants in vocational education in Flanders (in thousands)⁴⁰

	<i>1996/1997</i>
Technical secondary education (stage 2+3)	92
Vocational secondary education (stage 2+3)	76
Artistic secondary education (stage 2+3)	5
Vocational secondary education (stage 4)	4
Part-time vocational education	5
Total	177

³⁹ Statistics Sweden 1998, p. 92-97.⁴⁰ Ministerie van de Vlaamse Gemeenschap 1997, p.119,184.

England

Table 5.30 shows the number of participants in vocational education. However the introduction of new vocational programmes and changes in definitions make the figures difficult to compare over time.

Female participation in Modern Apprenticeships increased between 1995 and 1998, with girls now participating on an equal footing with men. At the same time however the number of participants over 18 increased as well, indicating that especially females over 18 are participating. Further only 5% of the new participants in 1998 was non-white, although the participation of ethnical groups has increased since 1995 (DfEE 1998b, p.49).

The percentage of female starters in other training increased from 41% to 49% between 1990 and 1998. The age distribution remained largely the same during this period, with a quarter being over 18. Finally the share of participants from ethnical groups is stable at 8% (DfEE 1998b, p.49).

Table 5.30: Number of participants in vocational education in England (in thousands)⁴¹

	1991	1992	1993	1994	1995	1996	1997	1998
Full-time Further Education (UK)					747		860	864
Modern Apprenticeships	-	-	-	-	-	25	76	110
National Traineeships	-	-	-	-	-	-	-	1
Other Training ⁴²	193				224	211	189	150

5.3.4 Dynamic analyses (PM)

The share of vocational education seems to remain quite constant over the years, with little shifts between school- and work-based programmes. After a period of decline the share of apprenticeships has increased in recent years, probably due to economic circumstances.

5.3.5 Overview

Table 5.31: Overview of possible explanations of differences in indicator scores and their relevance in the five countries

	<i>Netherlands</i>	<i>Germany</i>	<i>Sweden</i>	<i>Flanders</i>	<i>England</i>
Participation (ind score)	2	1	5	3	4
Type of instut	PM	PM	PM	PM	PM
Type of programme	PM	PM	PM	PM	PM
Length of pogr				+	-
Time to complete	PM	PM	PM	PM	PM
Work/school-based		-	+	+	+
Pract. Component	-				
Age	PM	PM	PM	PM	PM
Dynamic	Stable	Decrease	Decrease	Stable	Stable
Short run	PM	PM	PM	PM	PM
Mode	PM	PM	PM	PM	PM

-: the results are underestimated: the score of this country should be higher in comparison to the other countries

+: the results are overestimated: the score of this country should be lower in comparison to the other countries

⁴¹ DfEE 1996 (p. 24); DfEE 1998a (p.42-43); DfEE 1998b (p.45-46).

⁴² Including Youth Credits and Youth Training.

- Enrolment in upper secondary vocational education in the Netherlands is high compared to general education (only slightly lower than in Germany).
- The average duration of vocational education is not very different from most other countries. Flanders has a longer duration, whereas England only provides short courses.
- The share of apprenticeships in vocational education is low compared to Germany, but higher than in the other countries. (Until 1996 Sweden and England had no comprehensive system of apprenticeships at all).
- The practical component in both school-based and work-based education is higher than in all the other countries. Therefore participation in vocational oriented education may be underestimated compared to other countries.
- The share of vocational education seems to remain quite constant over the years, with little shifts between school- and work-based programmes. After a period of decline the share of apprenticeships has increased in recent years, probably due to economic circumstances.

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Center for
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Signs of the times

*Monitoring the position of Dutch
education: the O 8 project*

Stage two: digging deeper

Higher education

Enschede, 21-4-2000

Frans Kaiser

Lianne van de Maat

6 Higher education

6.1 Introduction

In this report, tertiary education in the Netherlands will be positioned among systems from four other countries: Sweden, Germany, Flanders (or Belgium) and the United Kingdom (or England). For the latter two countries the choice of regional coverage will be determined according to the availability of data. At this stage, Germany is considered as one country; in later stages we may focus on one or two *Länder*.

The indicators on which these five countries are positioned are:

- Total expenditure from both public and private sources for tertiary educational institutions as a percentage of GDP
- Participation in tertiary education by type of institution

Information on these two indicators is based on Education at a Glance 1998, on the underlying UOE data-files and on national statistical sources.

6.2 Expenditure on tertiary education as a percentage of GDP

In Table 6.1 the scores on the indicator for expenditure on tertiary education are presented.

Table 6.1: Total expenditure from both public and private sources for educational institutions plus public subsidies to households as a percentage of GDP, tertiary level, 1995

	1995
NL	1.59
D	1.17
S	2.26
FI	m
UK	1.21
OECD total	1.7

source: EaG, 1998, table B1.1c; UOE datatable FINANCE

m: missing

The Netherlands comes out second on this indicator, way behind Sweden. Data for Flanders are missing due to the absence of data on private payments. All countries except Sweden have a lower score than the OECD-total.⁴³

The score of the Netherlands indicates that Dutch society gives less priority to tertiary education (provided by educational institutions) than the Swedish society does, but more than the German and the British.

This interpretation is valid only if the coverage of the indicator is the same in all countries. If that is not the case, we have to revise our interpretation of the scores in Table 6.1 (depending on the size of the differences in coverage). In the section on coverage, we will address this issue.

⁴³ OECD total is calculated as a weighted mean of the data values of all countries for which data are available or can be estimated. This point of reference is chosen for practical reasons: in the Dutch policy discussions the Dutch score on the indicator was compared to the score of the OECD as a single entity. The scores of large countries have a greater effect on the OECD total score than the scores of small countries.

Tertiary education is a multi-product organisation, ‘producing’ teaching, research and community services. In addition, these products will differ between countries regarding their qualities. The concept ‘tertiary education’ as used in our interpretation of the scores in Table 6.1 needs to be specified. Can we identify any differences between the countries in the productmix and the characteristics of the products that may affect the scores on the indicator? If so, we again may have to revise our initial interpretation of the scores. We will address these issues in the section ‘structural differences’ .

6.2.1 Coverage

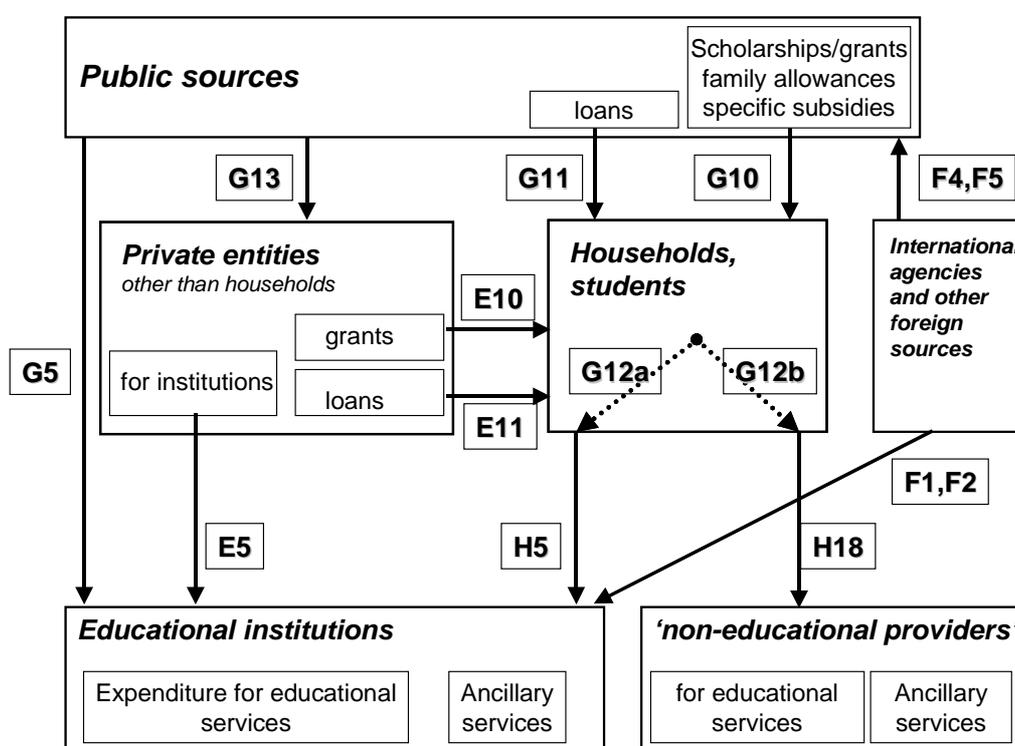
In this first section, we focus on differences in coverage, that may contribute to differences in the scores on the indicator.

We distinguish two elements of coverage: the type of institutions for which data on expenditure are included and the type of expenditure data that are covered.

Types of expenditure

Since we analyse scores on an indicator presented in Education at a Glance, it seems natural to start our analyses on coverage with an analyses of the data underlying those scores. These UOE⁴⁴ finance data are collected in tables which structure can best be understood by looking at the underlying diagram of financial flows.

Diagram 1 Flows of funds/transfers for education according to the UOE table FINANCE1



⁴⁴ UNESCO, OECD, EUROSTAT

source: UOE Data Collection, Data Collection Instruments for the 1999 Data Collection on Education Systems, Definitions, explanations, and instructions UOE Data collection tables, p 62, OECD, Paris, 1999

note: The boxes next to the arrows indicate the rows in FINANCE1 in which the according funds/transfers should be reported.

The indicator for which the scores are presented in Table 6.1 is calculated as the sum of G5, E5, H5, F1, F2, and G12b.

Table 6.1 does not comprise data on Flanders because data on E5 and H5 were missing. To include Flanders in the comparison, we calculated an alternative indicator, excluding these two categories.

Table 6.2: Direct public expenditure for educational institutions plus public subsidies to households as a percentage of GDP, tertiary level, 1995

NL	1.44
D	1.09
S	2.15
FI	0.90
UK	1.03

source: UOE datatable FINANCE

note: none of the five countries reported any expenditure from international sources

formula: G5+G12b

Again Sweden is on top in the ranking of the countries, followed by the Netherlands. Flanders scores lowest.

Public subsidies to households and other private entities

Public subsidies to households are relatively high in the UK and the Netherlands and relatively low in Germany and Sweden.

Table 6.3: Total public subsidies to households and other private entities excluding public subsidies for student living costs as a percentage of GDP, tertiary education, 1995

NL	0.13
D	0.01
S	0
FI	0
UK	0.19
OECD total	0.11

source: EaG 1998, table B1.1c.

note: formula: G10+G11-G12b

Public subsidies to households are included in the calculation of the indicator. That means that in addition to the public and private contributions to education institutions public funds spend in non-education institutions are included. Private contributions to non-education institutions are not. This has to lead to a revision of the interpretation of the indicatorscores. Private contributions to non-education institutions are substantial and their relative size differs widely between countries. There is some discussion on whether or not to include cost of living as part of expenditure on tertiary education. OECD clearly chooses to include cost of living, but only that part that is covered by public subsidies. If we have to interpret the score on the indicator we have to describe it as the effort a society makes to tertiary education, excluding the private effort related to cost of living.

These loans are as public subsidies. The real public subsidies on these loans however are much lower since private entities (graduates) will repay most of these loans. These repayments are private contributions. The public subsidies to households are therefore significantly less than EaG makes us believe.

As for the last coverage issue, there are some indications that not all private higher education institutions are covered. The impact this will have on the indicator score is however marginal.

Loans

Part of the government subsidies to households are loans. Loans are reported on a gross base (loan repayments are not taken into account). It may be argued that for a proper reporting, net costs of loans should be taken. These net public costs are costs subsidies to enable lower interest rates, costs of guaranteed loans that are not repaid. It is obvious that the net costs are substantially lower than gross public expenditure.

The data show that in Sweden, expenditure on loans is high. In Germany expenditure on loans is low and Flanders even non-existing. What the real public subsidies to these loans are we don't know. But if we assume that the relative size of these subsidies is the same in all countries we may conclude that public subsidies are substantially lower in Sweden and to a lesser extent in the UK and the Netherlands.

Table 6.4: Public transfers on loans to households (G11) as a percentage of GDP, tertiary level, 1995

	<i>public loans</i>
NL	0.06
D	0.03
S	0.39
FI	0.00
UK	0.08

source: UOE-datafiles (Finance1)

Other public subsidies to households

The other public subsidies to households (as reported in Education at a Glance) comprise grants, scholarships, family allowances, and specific subsidies. A category which is much discussed but not included in EaG are public subsidies in the form of tax reductions or exemptions. In countries where such fiscal arrangements exist, not all public subsidies to households are visible. In a special survey of the OECD INES secretariat on public subsidies to households, estimations are made on most types of public subsidies (see Table 6.5).

Table 6.5: Public subsidies on households, by type of subsidy, as a percentage of GDP, 1995

	<i>grants</i>	<i>family allowances</i>	<i>specific subsidies</i>	<i>tax arrangements</i>	<i>loans</i>	<i>total</i>
NL	0.20		0.08		0.13	0.42
D	0.02	0.05	0.00	0.04	0.01	0.13
S	0.21				0.38	0.59
FI						0.00
UK	0.33	0.01			0.12	0.47

source: OECD, Indicator on Public Subsidies to Households, Revised draft, Paris, 1999

note: the total refers to 1995, the breakdown is based on proportions in 1997 as reported in the source mentioned above.

As mentioned before, Table 6.5 comprises most of the categories of public subsidies. There is however one category that is not covered, i.e. public subsidies that are not specifically related to education. Examples of such public subsidies are subsidies for housing available to all

people, subsidised transportation for all young people, and social security benefits. In the INES project this category is explicitly excluded. However, if social security benefits are available for students in country A and not available in country B, the real public subsidies in country A will be too low in the comparison with country B. Unfortunately, this type of information is not yet available. Although the OECD Second Finance Comparability study might address some aspects of it, this category will remain a blind spot. In future stages of the underlying project, this issue will be addressed.

Private payments

To educational institutions

Table 6.6: Private payments to educational institutions excluding public subsidies to households and other private entities

	1995
NL	0.02
D	0.07
S	0.11
FI	m
UK	0.11*
OECD total	0.67

source: EaG 1998, table B1.1c.

note: formula: E5+H5-G12a

* the score on UK cannot be reproduced using the UOE datatables. Following those tables, the UK score should be 0.

Large part of the private payments are tuition fees. In the Netherlands these are high compared to Sweden, Germany and Flanders and low compared to the UK. However, a substantial part of the fees are subsidised by public subsidies (which are netted out of the data in Table 6.6) both in the Netherlands and the UK.

In the UK, funds originating in the public sector spent by households on tuition fees are included, but not amounts spent by households from their own resources (EaG98, Annex 3, p.382). This becomes apparent when we compare expenditure reported under G12a to expenditure under H5. In Flanders and Sweden the amount reported in both categories is 0. In the UK the amount reported in both categories is 0.19% of GDP, which is consistent with the prior statement. In the Netherlands, H5 minus G12a is 0.03% of GDP. This implies that expenditure on educational institutions by households from their own resources is 0.03% of GDP. For Germany the data are broken down in such a way that this comparison cannot be made.

The third component of private payments (E5) we will address in the following paragraph.

Private payments with respect to R&D

In higher education three types of activities are performed: teaching, research and community services.

In the INES data on expenditure on the tertiary level, expenditure on teaching and on research (as performed in the higher education sector) are included. Expenditure on community services are usually excluded. The main part the latter category are expenditures on university hospitals.

A recent CHEPS study (Kaiser et al, 1999) showed that the coverage of the INES data regarding R&D is not the same in all countries. In Belgium (Flemish community) R&D expenditure from sources other than the education department are excluded⁴⁵. R&D

⁴⁵ source: EaG 1998, Annex 3

expenditure from other public departments alone was more than 12% of total expenditure. Since R&D funded from private sources is also a substantial part of R&D expenditure, this implies a substantial underestimate of the Flemish expenditure on tertiary education. The cases of the Netherlands and the UK showed also an underestimation of R&D expenditure. Due to changes in the reporting of the UK, the bias for UK is in years later than 1995 substantially smaller.

A simple check on the coverage regarding the private payments regarding R&D is the comparison of expenditure reported under E5 with expenditure on R&D in the higher education sector funded by business and private non-profit organisations as reported by OECD⁴⁶.

In the table below we list payments by private entities other than households next to R&D expenditure in the higher education sector financed by private sources. If we follow the logic of diagram 1, the amounts in the first column should be higher than the amounts in the second column. As we can see from the table, this basic condition is met in Sweden only. What consequences this may have for our interpretation of the score from Table 6.1 will be discussed later on.

Table 6.7: Payments by private entities other than households in tertiary education, and R&D expenditure in the higher education sector financed by private sources, as a percentage of GDP, 1995

	E5 (payments by private entities other than households)	HERD financed by private sources
NL	0.00	0.06
D	0.00	0.04
S	0.11	0.08
FI	m	m
UK	0.00	0.08

sources: UOE-datafiles (Finance1)

Expenditures not allocated

The countries differ in their way of using the category ‘not allocated by level’. For some countries this category is empty, implying that countries have allocated these types of expenditures to the different levels (Netherlands, Sweden and UK). In Germany and Flanders this category did contain data, the amount of which was around 4.6% of total expenditure (all levels). When comparing expenditure on the tertiary level, the German and Flemish data are therefore underestimated. Using enrolment data to allocate expenditures not allocated would result in scores on the alternative indicator (see Table 6.2) that are 0.03% higher for both countries.

Types of institutions

Private educational institutions

In the Netherlands, private educational institutions on the tertiary level not receiving and government support are not included. At the moment there is one such an institution. This means that private expenditure on tertiary education is underestimated. For the other countries we don't have any information on exclusion of private institutions at the tertiary level.

Entities not being educational institutions

⁴⁶ OECD, Basic Science and Technology Statistics, 1999 edition, Paris, 2000

The definition of the indicator does not include expenditure on entities not being educational institutions. This means that expenditure on educational services and ancillary services (like books, transportation, meals, housing) not provided by educational institutions are not included. Our initial interpretation therefore does not need revision. However, there are strong indications that on the one hand there are differences in national conceptions of what educational services and ancillary services are and on the other hand countries differ in who provides those services. For example, in Germany books are provided by the higher education institutions, whereas in the Netherlands, students buy books from other entities. This situation may explain part of the low score of the Netherlands on the indicator in Table 6.6, which will lead to an underestimation of the Dutch score in Table 6.1. A full analysis of this issue is not possible yet, due to a lack of information. OECD has initiated a study to collect this type of information.⁴⁷

6.2.2 Structural differences

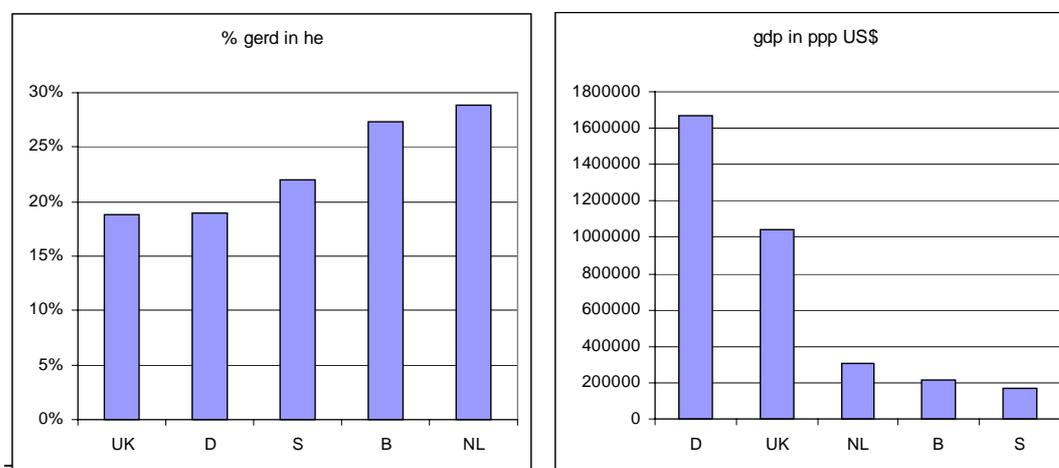
In this section we will look into differences in the R&D infrastructure as well as in the educational structure that may explain a different score on the indicator expenditure on tertiary education. The educational structural differences we will refer to are:

- differences in length of programmes
- differences in levels of programmes
- differences in the balance between ‘expensive’ programmes and ‘cheap’ programmes
- differences in funding mechanisms

R&D-infrastructure

As reported in a study by CHEPS, the R&D infrastructure of a country has a significant effect on the score on the indicator expenditure on tertiary education. Based on OECD-DSTI data, CHEPS concluded that in ‘small’ economies a large part of R&D expenditure was located in the higher education sector, whereas in ‘large’ economies the part of R&D performed in the higher education sector was relatively small (see Figure 6.1). This means that expenditure in Belgium, Sweden and the Netherlands will be higher due to this ‘bias’ than expenditure in Germany and the UK.

Figure 6.1: Expenditure on R&D in the higher education sector as a percentage of gross domestic expenditure on R&D (GERD), 1995



⁴⁷ The Second finance comparability study has started early 2000 and will be finalised by the OECD INES secretariat Summer 2000.

source: OECD, Basic Science and Technology Statistics, 1999 edition, Paris, 2000

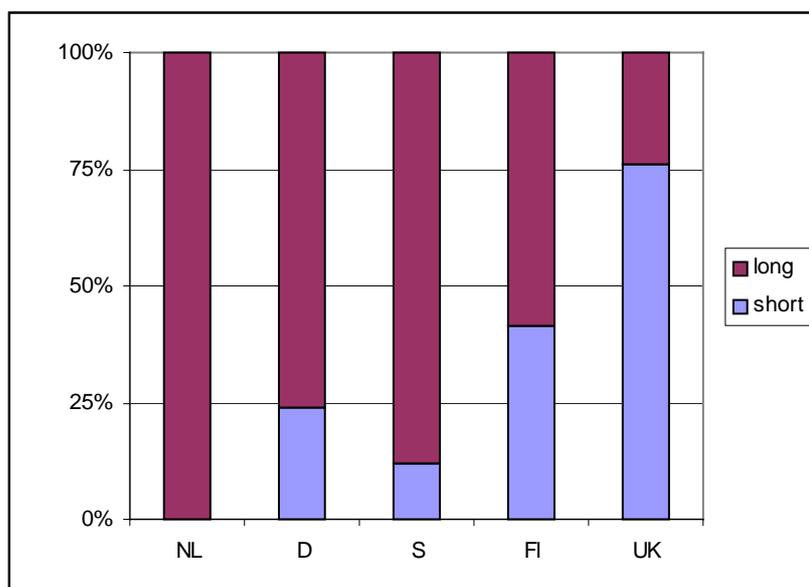
Differences in length of programmes

The length of programmes has a direct effect on the level of enrolment: long programmes will lead to a high level of enrolment. The assumption is that a high level of enrolment will lead to a high level of expenditure.

In the Netherlands, the standard length of higher education programmes is four years (both at the *hogeschool*-level and on the university level), with a few exceptions in engineering and medical sciences. Although there is a discussion on the structure and length of programmes within the larger discussion on the Bologna declaration, the existing structure is foreseen to remain the dominant structure in the years to come.

In Flanders there is a clear difference between short cycle programmes (three years programmes, at the *hogescholen* only) and long cycle programmes (four years programmes, both at *hogescholen* and universities). A similar distinction between short programmes (three to four years at *Fachhochschulen*) and long programmes (four to five years at universities). In the Netherlands, Flanders and Germany, the programmes are parallel: the long programmes do not follow on the short programme but are a separate line. In the UK, a consecutive model exists: the short bachelor's programme may be followed by the short master's programme. The Swedish model is a hybrid system, in that a student may decide during his or her study what type of programme (s)he wants to graduate in.

Figure 6.2: Enrolment by length of programme, 1995



note: long: NL HBO and universities; D: universities; S: programmes leading to degrees longer than 120 points; FI: Hogescholen two cycle programmes and universities; UK: post graduate programmes
 short: D: Fachhochschulen; S: programmes leading to degrees less than 120 points; FI: Hogescholen one cycle programmes; UK: undergraduate programmes

Based on our assumption regarding the relation between length of programme and level of expenditure, these results suggest that the level of expenditure in the Netherlands will be relatively high because of the length of the programmes provided and relatively low in the UK.

Workbased versus classroom based learning

This difference may be relevant if we assume that work based learning involves less public expenditure and more private contributions than classroom based learning. If a country has substantially more work based learning elements in its programme than other countries, this would lead to a different balance between public and private contributions. This would not be problematic if all private contributions would be included in the indicator.

Two questions can be formulated: do substantial differences exist in the part of work based learning in higher education in the various countries? If so, are all private contributions covered in the indicator score?

In Flanders, the one-cycle programmes at the *hogescholen* comprise a substantial period of practical work. The length of this period varies by discipline. In the two-cycle programmes at *hogescholen* and in the university programmes, periods of practical work are present, but in general these periods are shorter than in the one-cycle programmes. There is no clear scheme regarding payments of the host organisations.

In the German *Fachhochschulen*, practical work is an essential part of the curriculum. In addition, experiments are going on to develop apprenticeship-like programmes at this level. At the university level, periods of practical work do exist, but their size and nature differs by discipline and institution.

In the Netherlands, the *hogeschool*-programmes comprise a substantial period of work based learning (around a quarter of the time). Small-scale apprenticeship-like schemes are operational, but the proportion of students enrolled in these schemes is (still) small. In university programmes such periods are marginal. There are no general rules regarding payment by the host organisations.

In Swedish higher education, practical periods are most common in the professional degree programmes. The length of these periods however is up to the institutions to decide on. There is a major experiment regarding an apprenticeship-like scheme.

British higher education has a tradition in which part of the programmes are offered as sandwich-courses. In these courses, a substantial period of practical work is included in the programme. Around 9% of all students are enrolled in these courses.

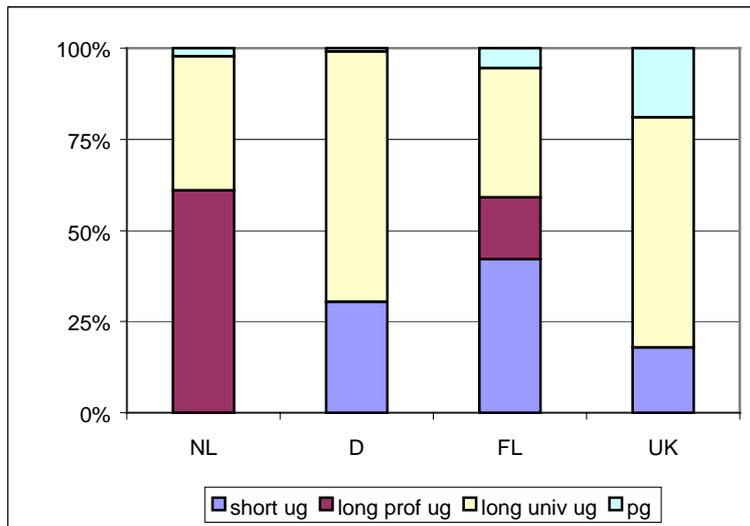
There is a difference in the 'normal' periods of practical work in higher education programmes and apprenticeship-like programmes at the higher level. The latter are still marginal in most countries. Although there are experiments in most countries (the Netherlands, Germany, Sweden and UK), these experiments are located in the vocational sector and are limited in size. The difference in work-based learning programmes is marked here because private contributions are substantial only in apprenticeship like schemes.

Level of programme

Assumption is that a high level programme is more expensive than a low level programme (due to a lower student staff ratio).

We have to look into the higher level (ISCED 7 or doctorate education). In some countries this is formalised, in others not. This is a potential bias. If doctorate students are considered as staff (as is the case in the Netherlands), public expenditure on these 'students' are included. If they are considered as students however, public subsidies as grants and scholarships are not included. Further investigations have to be made in this respect.

Figure 6.3: Distribution of enrolment by level, 1996



source: NL: CBS Statline; D: SBA; FL: Vliir, Ministry of education; UK: HESA
 note: Swedish data are not broken down by level

Price of programmes

Teaching and research activities differ substantially between disciplines. In a number of countries such differences are also accounted for in the funding formulae. The high cost disciplines are medicine, engineering and natural sciences. Differences in the disciplinary structure of the programme-offering may contribute to differences in the score on the indicator.

Figure 6.4 shows that the Netherlands has relatively few students enrolled in ‘expensive’ programmes (total HE)

Figure 6.4: Enrolment in ‘expensive’ programmes as percentage of total enrolment in higher education

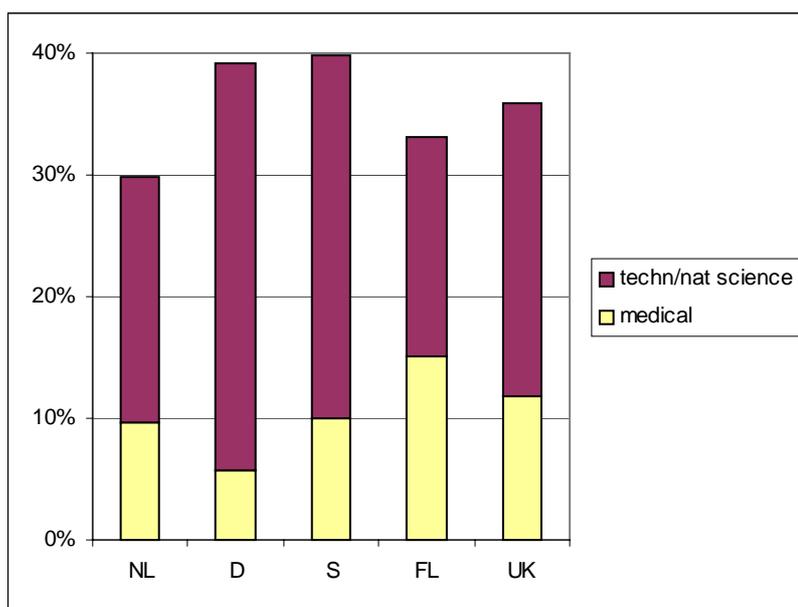
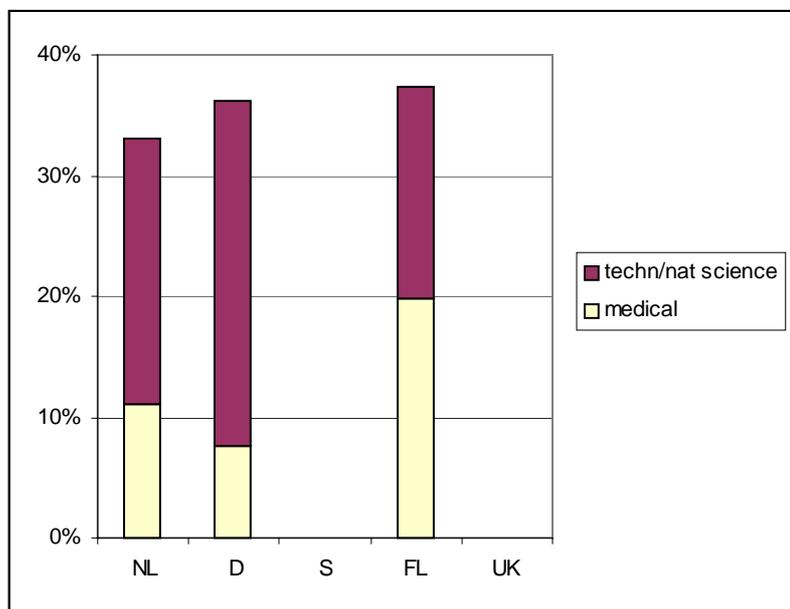


Figure 6.5: Enrolment in ‘expensive’ programmes as percentage of total enrolment in higher education (University level)



Funding mechanisms

The funding mechanisms are the rules that determine how funds are allocated to HEIs. We assume that certain aspects of the funding mechanism may influence the score on the indicator. Some mechanisms (output oriented) are considered to stimulate more efficient behaviour of higher education institutions than other mechanisms (incremental ones).

The aspects that are assumed to have an influence are:

- the funding base: what is the basis for calculation of the funding? Most common are input characteristics like enrolment and output characteristics like number of graduates.
- the consequences of the mechanism: is the model a claim model or a distributional model?

Based on an analysis of the national funding mechanisms, we conclude that the impact of the funding mechanism will be limited, due to the fact that in all countries, except Germany, the funding mechanisms serve distributional services only. In the other four countries, the funding mechanisms are distributional models. In these cases the funding mechanism will have no effect. In Germany, the mechanism may have led to a slight increase in expenditure but it is impossible to quantify this effect.

Table 6.8: Summary of characteristics of higher education funding mechanisms

	<i>Netherlands</i>	<i>Germany</i>	<i>Sweden</i>	<i>Belgium</i>	<i>UK</i>
funding base					
input	x		x	x	x
output	x		x		
incremental		x			
type of model	distr	claim	distr	distr	distr

A full description of the funding mechanisms will be presented in section 6.5.

6.2.3 Dynamic analyses

In the previous sections, we have focused on the indicator score for 1995. We looked into the factors that might explain the Dutch position on the indicator in 1995. These analyses are of a static nature. We do not take into account changes in certain characteristics as possible explanations. In this section, we turn to dynamic analyses, analysing changes in characteristics that might explain changes in the indicator scores. The reason for such dynamic analyses is straightforward. If a factor, related to coverage or structural differences, has an influence on the indicator score, then a change in that factor has to be accompanied by a change in the indicator score. If the indicator score changes but a factor does not, the influence of that factor must be questioned.

Changes in the indicator score

Table 6.9: Total expenditure for educational institutions (public and private sources) as a percentage of GDP, tertiary level

	1991	1992	1993	1994	1995
NL	1.7	1.8	1.4	1.3	1.3
D	0.9		1.1	1.1	1.1
S	1.2	1.6	1.6	1.6	1.7
FI					
UK		1.1	0.9	0.9	1

source: EaG, 1995-1998

The score of the Netherlands has deteriorated, whereas the score of the other countries has improved. There are no data available for the Flemish case, due to the lack of data on private contributions.

If we consider direct government expenditure, data for Flanders can be presented.

Table 6.10: Direct public expenditure for educational institutions as a percentage of GDP, tertiary level

	1991	1992	1993	1994	1995
NL	1.7	1.2	1.3	1.2	1.1
D	0.9	0.9	0.9	0.9	1
S	1.2	1	1.5	1.5	1.6
FI	0.9	0.6	1	1	0.9
UK	1	0.8	0.7	0.7	0.7

source: EaG, 1995-1998

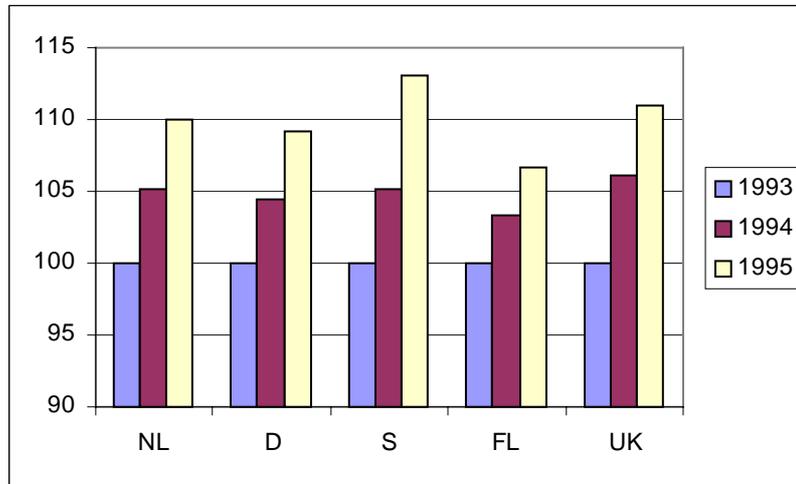
In direct public expenditure, a decrease can be seen in the Netherlands and in Flanders.

Changes in the factors described above

Coverage

There are some remarkable changes over time. The Dutch score changes drastically from 1991 to 1992. The Swedish score leaps up in 1993. This may be due on to changes in GDP or to changes in coverage. The data for Sweden are very susceptible for that. After 1992 Sweden included R&D expenditures, which lead to an increase of expenditure by over one third in 1993. This was not reflected in the indicator score for 1993 because of the development of GDP.

Figure 6.6: Changes in GDP (1993=100)



From Figure 6.7 we conclude that the proportion of students enrolled in 'expensive' programmes has decreased in Flanders and Germany, has remained stable in the Netherlands and the UK and has grown in Sweden. The proportion of medicine has grown in all countries, except for the UK.

At the university level, the situation is slightly different (Figure 6.8). The proportion of students enrolled in expensive programmes has grown (compared to stable in all higher education).

Figure 6.7: Enrolment in 'expensive' programmes as a percentage of total enrolment, 1992 and 1996

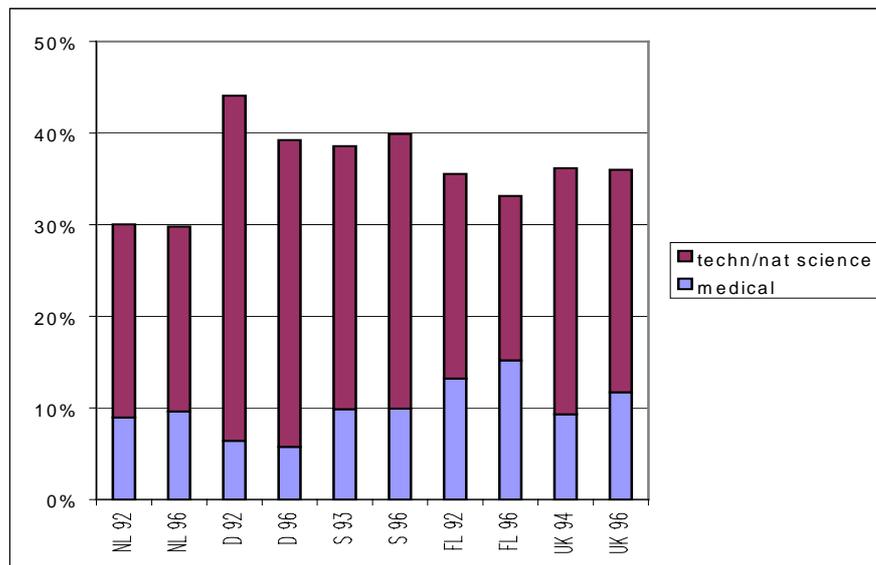
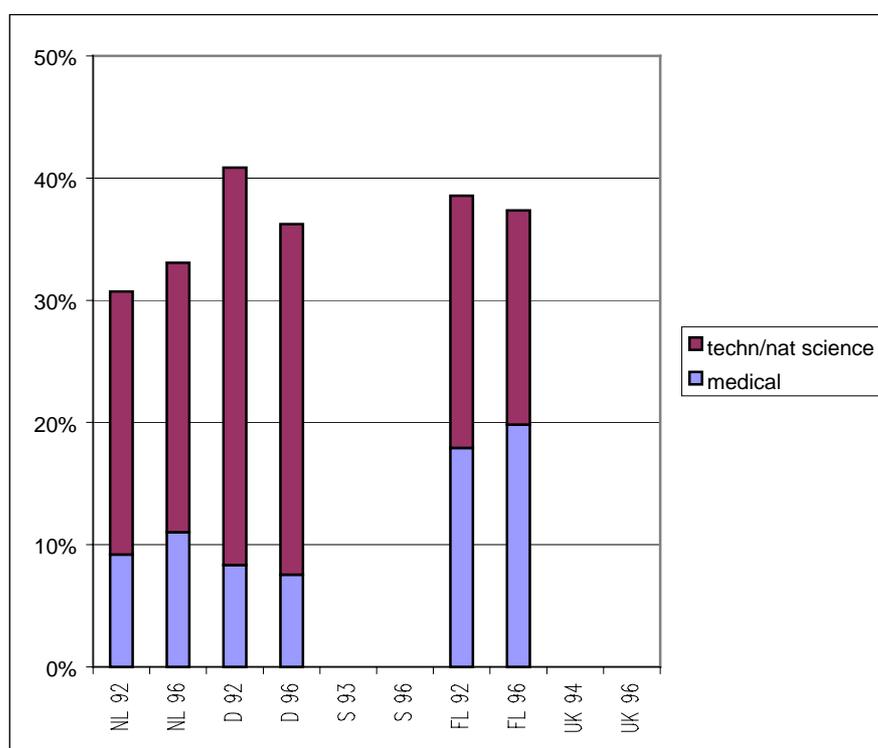


Figure 6.8: Enrolment in 'expensive' programmes as a percentage of total enrolment (university level) 1993-1996



Policy

- There have been major changes in the higher education structures in Flanders (1992/1993), Germany (unification), Sweden (1992) and the UK (unified system). These changes have made time series data before and after 1992 incomparable.
- In the UK there has been a strong policy in the late 1980s, early 1990s to increase the level of participation in higher education. This expansion of the system in terms of enrolment has been accompanied by an expansion of the public effort in terms of expenditure on higher education.

6.2.4 Overview expenditure

Figure 6.9: Overview of possible explanations of differences in scores on indicator I and their relevance in the five countries

	NL	D	S	FL	UK
gross loans effect	+		++		+
tax regulations		-			
private payments to EI					-
private payments to R&D	-	-			--
expenditure not allocated		-		-	
private institutions	-				
non-educational institutions	-				
R&D infrastructure	++		+	++	
length of programme	+				-
price of programmes	-	+	+		
change in GDP			-	+	

note: + : due to this factor the score on the indicator as presented in EaG is relatively high
 - : due to this factor the score on the indicator as presented in EaG is relatively low

6.3 Participation in higher education

Table 6.11: Net enrolment in public and private tertiary education by age-group (1995/96, in %)

	18-21	22-25	26-29	17-34
NL	24.0	19.2	5.4	10.7
D	10.8	17.2	11.8	9.4
S	13.7	17.9	8.0	9.9
FI	39.6	15.4	4.0	12.3
UK	26.9	9.4	4.8	9.4

source: EaG 1998

The calculation of a net rate of participation is a two-faced issue. On the one hand, one would like to calculate a rate for each separate year, providing the most valid information. This would lead to a large number of indicator scores. On the other hand one would like to present one figure, providing an indicator score that can be easily used by policy makers and other end-users. The use of age-bands, as presented in EaG is a clear compromise. It is difficult to determine in what country the net participation rate is highest..

An alternative way to calculate one indicator score is to broaden the age band. In the last column a broad age-band score is presented. Flanders comes out first, followed by the Netherlands do not differ from the sum-score. The differences in the scores of the UK, Sweden and Germany are very small.

6.3.1 Coverage

Net enrolment rates are calculated by dividing the number of tertiary students in a specific age group by the total population in that age group.

Types of institutions

Based on a quick survey (Pilos, 1999), we conclude that there are no substantial differences in coverage, as type of institution is concerned.

Types of programmes

Post graduate programmes (ISCED 7) is, according to the guidelines, comprised in the net enrolment rates. In Germany however, students pursuing doctoral studies are not obliged to register at university and it is not possible to estimate their number. Nevertheless, enrolment at ISCED 7 is quite small and does not have much influence on the results (EaG 98 p. 394).

6.3.2 Structural differences

Length of programmes

See section 6.2.2.

Time to complete

In the Netherlands most students need more time to complete than the official length of the programmes. At the *hogescholen* students need on average around 10% more time. At universities students need on average 30 to 40% more time to complete. At German *Fachhochschulen*, students need on average around 25% more time than the official length of the programmes. At universities, this percentage is between 25 to 40. For Flanders and the

UK no information on the actual duration of study is available. The modular system in Sweden is the prime reason for the lack of this information in Sweden.

This means that the rate of participation in Germany will be overestimated due to the relatively long extension of the time to complete.

Mode of enrolment

Full-time and part-time students

The OECD indicator net enrolment is based on head counts. This means that no distinction is made between full-time and part-time students.

It is reasonable to suppose that the part-time students spend more years at the higher education institute than students studying full-time. So in the case that a country has a lot of part time students a student is represented in the indicator year after year. Because of this, a relatively high proportion of part-time students will lead to an overestimation of the rate of participation.

For two of the five countries no data on mode of enrolment are available in national statistics. Although it is not possible to enrol in Germany as part-time student the OECD-statistics have information on the number of part-time students. In Sweden, the modular system is the reason for the lack of these data. In the Netherlands, the UK and Flanders the data are not completely comparable, but the data available show substantial differences.

Table 6.12: Proportion of part-time students in total enrolment (1995)

	<i>type of institution</i>	<i>% part time</i>
NL	hogescholen	15%
	universities	6%
	total	12%
D	ISCED 5	16%
	ISCED 6	0%
	total	2%
FI	hogescholen	12%
	universities	3%
	total	8%
UK	first degree	17%
	other undergraduate	59%
	pg research	30%
	pg taught	59%
	total	31%

sources: UK: HESA, Student statistics, table 3

NL: CBS, Statline

Flanders: VLIR, Departement Onderwijs

Germany: UOE-datafile

Due to the large proportion of part-time students (in comparison to the Netherlands), the rate of participation will be overestimated for the UK. For Flanders the indicator presents a slight underestimated rate of participation. The absence of formal part-time students in German and Swedish higher education leads to an underestimation of their rate of participation, relative to the Netherlands.

The impact of this factor is difficult to quantify. If we assume that part-time students take 1.5 times the time to complete of a full time student, an X part of part-time students headcount is 2/3 X number of part-time students fulltime. Using head count therefore overestimated the

rate of participation by 1-2/3X. using this assumption would lead to the following quantifications of the part-time headcount bias: UK 10%, NL 4%, FI 3%

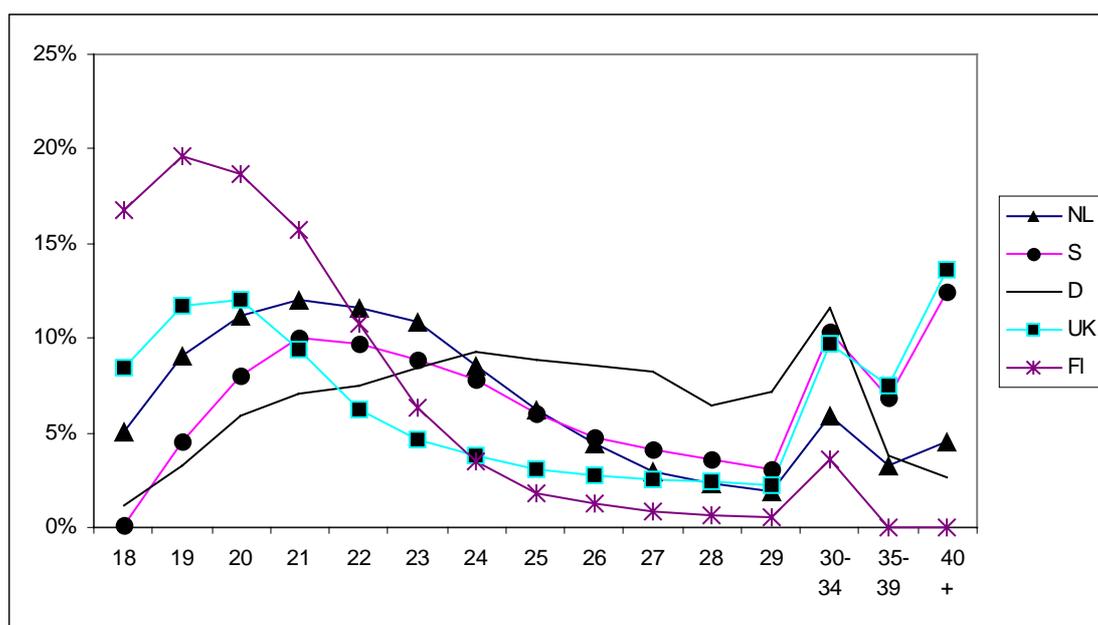
Proportion of mature students

The rate of participation in EaG98 is calculated for three age bands. These age-bands exclude students who are younger than 18 years and older than 29 years old.

This may have a direct effect on the indicator scores. If country A has relatively more students older than 30 years than country B the indicator underestimates the rate of participation in country A. In excluding students aged 30+ country A 'looses' more students than country B.

If we look at the distribution of students by age in the five countries selected, we find that in the UK, Sweden, and Germany the proportion of students outside the three age-bands is larger than in the Netherlands. In Flanders, the number of students outside the three age-bands is dramatically lower. This means that the rate of participation for the UK, Sweden, and Germany are underestimated by the indicator (taking the Netherlands as a point of reference). The Flemish rate of participation will be relatively overestimated.

Figure 6.10: Distribution of enrolment in tertiary education by age, 1995



source: UOE datafile Enrolment

In Flanders around 4% of total enrolment is aged 30 or older. In Germany this percentage is around 19, in the Netherlands around 14 in Sweden around 29, and in the United Kingdom 31.

Baby booms and delayed entry

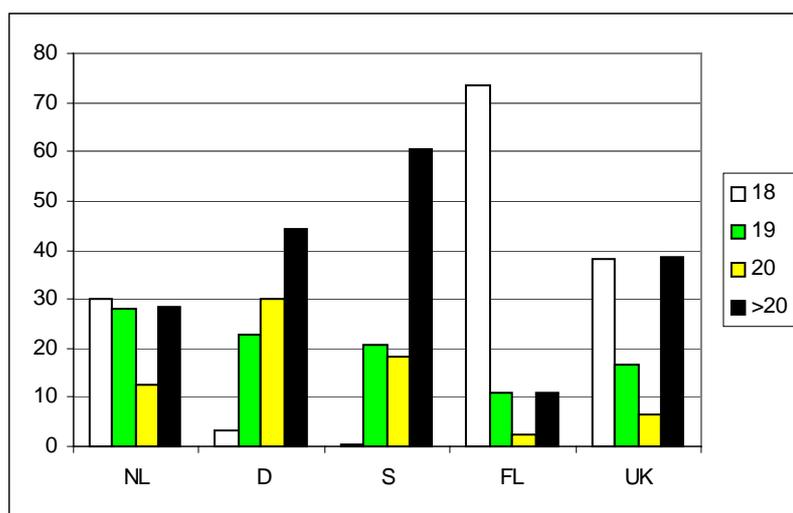
The obvious distorting influence of 'age' described above is not the only biasing effect 'age' has. A second effect is related to the fact that the size of birth cohorts vary through time. This effect we call the desynchronisation bias. In most Western European countries there have been three baby-booms since the second world war: in 1946, in the mid 1960s (1965/66) and in the early 1990s (1990/1/2). If the EaG indicator is used, these baby-booms will have no

effect on the scores if we assume that the age of new entrants remains the same and that this age is similar in all countries. If the age of new entrants in one country increases (due to postponement of entrance or more mature new entrants) varying birth cohorts may cause a distortion. In case entrance into higher education is postponed by two years, the peak of a baby boom influences the denominator (the reference group) but does not affect the nominator for two years. In that case the rate of participation will be underestimated for two years. If the peak has passed in the denominator it will be presented in the nominator, which will lead to an overestimation of the rate of participation. Since the birth patterns in the five countries are not fully synchronised and there are substantial differences in the age of new entrants between the countries, this may lead to some comparative distortion.

For 1995 this type of distortions in the EaG data are not relevant. The peak in the 1965 birth cohort is 30 years old and does not effect the calculation of rate of participation (excludes 30+). The 1990-92 peak has not yet reached higher education.

As for the age at which students start their study, we find some remarkable differences between countries. These differences cannot be related to differences in theoretical starting age since the national systems do not differ significantly in that respect.

Figure 6.11: Distribution of new entrants by age, 1995



sources: NL and FL: first year students at the Universities

S: first year students in the Högskolar programme leading to a Diploma (undergraduate programmes)

G: first year students at the Universities and Kunsthochschulen

Theoretical starting age

In the Netherlands pupils graduate from secondary school at the age of 17 (HAVO) or 18 (VWO) preparing for *hogescholen* and university. Access to higher education in Germany requires *Allgemeine Hochschulreife* or the *Fachgebundene Hochschulreife*, which are normally obtained after 13 ascending school years (theoretical age: 19 years). In Sweden, the general requirement for access to higher education is the completion of upper secondary school (normal age 18) or having 4 years of work experience and being 25 years or older. In Flanders, the theoretical starting age is 18 as it is in the UK.

In Sweden 28% of the students is even 30 year or older when they first enter the undergraduate programme. 4% of the German first year students is 30 years or older.

6.3.3 Policy

Selection

Selection for all programmes at UK universities depends on the ratio of applications to places. Institutions set their own requirements for grades of passes at A level. These requirements vary enormously according to the level of demand for particular subjects and particular institutions (Jenniskens p. 281). In Flanders, there is an open access to higher education, except for engineering and medicine. In the Netherlands too, there is in principle open access, although the list of programmes to which numerus clausus is applied is much longer than in Flanders. Selection criteria are the results at secondary school. For the majority of courses of study in Germany there are no nationwide restrictions on the number of applicants who can be admitted. In some courses there are nation wide quotas due to the large numbers of applicants and the insufficient number of places available. The criteria for the selection are the applicant's average mark in school-leaving examination and the period a students has had to wait (between sitting for the school-leaving exam and applying) is also taken into account.

Starting age

In Sweden the 25/4 regulation, introduced in 1977, has survived the subsequent reforms of the higher education system. The regulation, which enables people aged 25 years or older and having 4 years of work experience to enter higher education, has lead to a substantial increase in the proportion of mature students. Since the 1980's there have been an number of initiatives aimed at stimulating the participation of young people entering higher education directly after completion of school. Although the percentage of young people in higher education has been rising, in comparison with other countries, Sweden continues to have a high percentage of people over the age of 25 who enrol for the first time in higher education.

Time to complete

In the Netherlands, the strict regulations regarding the student support system have lead in the late 1980s to a substantial decrease of the time to complete. In Germany, the extension of the time to study is high on the political agenda for years, but no effective instruments have been found or applied to reduced the time to complete.

6.3.4 Changes the factors described above

Figure 6.12: Overview of possible explanations of differences in scores on indicator II and their relevance in the five countries

	NL	D	S	FL	UK
time to complete	+	++			
length of programmes					-
part-time enrolment	+				++
mature students	-	-	--		--

6.4 References

Kaiser, F., A.M. Klemperer, A. Gornitzka, E.G. Schrier, B.J.R. van der Meulen, P.A.M. Maassen, *Separating teaching and research expenditure in higher education, A pilot-study into the potential of the subtraction method*, CHEPS, Enschede, 1999

6.5 Appendix 1: Funding mechanisms

The Netherlands

In the Dutch funding model for universities, the lump sum budget is separated into a teaching component and a research component.

The teaching component allocates two components:

- a teaching part, based on student and diploma numbers;
- an interweaveness part.

Through the first, formula-based part, funds are allocated to universities on the basis of the number of registered students and the number of first (Master's) degrees and professional (e.g. physician, dentist) degrees. Only students that have been registered no longer than the normative length of their programme (usually: four years) qualify for funding.

The tariff per student and the tariff per diploma are the same. There is a distinction between two categories of students and diplomas, namely programmes in arts, humanities, law, social sciences and languages on the one hand, and programmes in science, engineering, agriculture and medicine (including dentistry, pharmacy and veterinary science) on the other hand. For the former (the 'inexpensive' subjects) the tariff is Dfl 5,000; for the latter (the 'expensive' programmes) the tariff is 50% higher: Dfl 7,500. Thus, universities receive four times Dfl 5,000 for a registered Economics student and another Dfl 5,000 if he/she manages to obtain a Master's degree. A time lag of two years is applied: for the 1995 budget, registered students and diplomas for the academic year 1993/94 are used in the calculations. Therefore, no average (e.g. over a three-year period) is used. This feature, which is currently in discussion, may lead to sudden changes in a university's (teaching) funds.

The HOBEEK model is a distribution model, not a 'claim model'. Rising (teaching) performance does not lead to a higher budget for the sector as a whole. However, it may lead to some universities improving their relative funding position vis-a-vis each other.

The second part of the teaching budget is called 'interweaveness', as it is included to allow for the fact that academic research and academic teaching to a large extent are intertwined. The level of the interweaveness component is dependent on the combined amounts of the teaching

budget and the research budget (see below) per university. It is a 14 per cent (one-seventh) 'premium' upon the student-plus-diploma funding and the research funding. In 1995 the interweavens component represents about 13 per cent of HOBEEK funding

Research

The allocation of research funds to universities consists of three separate components:

- education related research
- funding of PhD-programmes
- strategic research.

The teaching related research allocation is a basic allocation to each university that intends to express the fact that research is a prerequisite for university teaching. The allocation is calculated by using a formula: it is a 40 per cent premium on the teaching tariffs. Therefore, the available budget for this component takes place in proportion to the teaching budgets (excluding interweavens) of the universities.

The second component in the research funds is an allocation based on the number of PhD degrees awarded (again, a two-year lag is applied). It is a compensation (premium) for doctoral work carried out by graduates in universities. Two rates apply: a rate of Dfl 60,000 for 'inexpensive' doctoral theses (e.g. in social sciences and humanities), and a rate of Dfl 120,000 for expensive ones (in exact, technical, and medical disciplines). In the 1995 budget Dfl 245 million is allocated in terms of PhD-related research funds. This is some 6.5% of the total HOBEEK allocation. If the number of PhD degrees increases, funds will be transferred from the strategic research component (see below).

The third, and most important part of research funding (in 1995: Dfl 1,760 million; 47 per cent of the HOBEEK allocation) is represented by the strategic research component. This component represents some 75 per cent of the 1995 HOBEEK-research funds allocated to universities. The name of this component derives from the fact that the Ministry intends to fund research that has strategic relevance, meaning 'relevant to society'. However, this part of research funding is still based mainly on historical allocations, with over the years some additional allocations made to relatively new or 'growing' universities. Thus, unlike for teaching, most of the funds for research are not appropriated in a normative way.

For the funding of HBO-institutions the following basic formula generates the amount of funds allocated for teaching:

$$\text{amount} = \text{funding tariff} \times \text{dynamic demand factor} \times \text{enrolment}$$

There are two funding tariffs for full-time students, one for programmes with a strong practical character (Dfl 8,790 in 1995) and one for programmes with a social science (so-called gamma) character (Dfl 6,900 in 1995). Previously there were six, so-called profiles. Still, there are some special arrangements for students in performing arts, music, theatre and teacher training. For part-time students, 75 per cent of the rates apply. Should tuition fees be changed, the level of the funding rates also is adjusted.

The formula for the dynamic demand factor is $[DG \times 4.5 + DO \times 1.35] / (TG + TD)$

where:

- DG the number of HBO-degrees awarded (during previous year)
- DO the number of students that have dropped-out (during previous year)
- 4.5 the normative funding period for HBO-graduates (4.5 years)
- 1.35 the normative funding period for HBO-drop-outs (1.35 years)
- TG total period (in years), during which graduates have been registered before graduation
- TD total period (in years), during which drop-outs have been registered

Germany

The annual budget, in which the state subsidies for the individual institution are presented, is included in the state law. The budget is subdivided into expenditure categories (line items) and positions (for personnel, described in the so-called *Stellenplan*). The budget is an integrated budget for education and research. Teaching and research are not funded separately. Usually the budget is already subdivided according to the institutional structure, and the positions are already assigned to the departments and institutes. The budget thus pre-determines the total expenditure process for the fiscal year.

The public (basic) funding of institutions of higher education is - apart from some exceptions- not the result of using a formula for calculating budget components. The funding is based on institutional budget requests, each approved - in a process of budget negotiations - by the authorities on the basis of institutional assessments (allowances by reimbursement). The starting point is the *Stellenplan* of the last year. Therefore, the budgeting process can be characterised as incremental and input-oriented. The amount of *Grundmittel* received by a university or *Fachhochschule* is not so much influenced by the actual number of students.

During the last few years in four *Länder* a small part of the budget is allocated by means of formula funding. These states are: Niedersachsen (1% of the budget), Nordrhein-Westfalen (4.5%), Sachsen (5.2%) and Rheinland-Pfalz (5.8%).

Flanders

The basic part of university funding is specifically meant to cover the costs of teaching and teaching related research (known as 'the working payment to the universities'). This part is provided to the institutions as a lump-sum (*werkingsuitkering*). The working payment to the universities consists of three parts:

- 1) a part for academic courses, doctoral programmes (*doctoraatsopleidingen*) and teacher training courses;
- 2) a part for continuing studies (*Voortgezette Opleidingen*);
- 3) a part for General Practitioner programmes.

The first part of the working grant is organised in a funding model: a funding formula, which is closely linked to developments in the number of students. The funding formula consists of two main parts. First a fixed part and second a variable part. In 1991, when the new model was introduced, both the fixed and the variable components determined 50% of the budget. The flexible part of the funding varies according the fluctuations in the number of 'education-load-units' *onderwijsbelastingseenheden* - OBE). A full-time student in humanities or social sciences is equivalent to one OBE, while a full-time student in science (including first-cycle medical and engineering students) is counted as two OBE. Medical and engineering students (second cycle) count for three OBE. Students are financed for a maximum of twice the nominal cycle time. If a student enrolls for the third time in the same academic year (at the same or at a different university) the institution is not eligible for financing for this student.

The other two parts of the working payment provided to the universities are mainly based on the number of graduates. The general amounts available for continuing studies and General Practitioners programmes are distributed over the universities on the basis of the average number of diplomas awarded in the last two academic years.

The funding mechanism for the *hogescholen* closely resembles that of the universities. The *hogescholen* receive payments to cover their personnel and operating costs. Each *hogeschool* receives a lump-sum. The decree specifies the overall sum for all *hogescholen* (art. 178). This sum is subsequently index-linked to the rise in unit labour costs and consumer prices. The sum per *hogeschool* is determined on the basis of the following criteria:

1. a historically fixed sum

2. a variable part based on finance-eligible units: a combination of student numbers (five-year average) and the weightings allocated to the courses.

As in the universities, different weightings are given to fund eligible-students to determine the number of finance-eligible. Four groups are distinguished, to which the following weights are attached: 1.0 (e.g. commercial science and business administration), 1.2 (applied linguistics and one-cycle industrial science courses), 1.4 (architecture, biotechnology, social work, two-cycle industrial science courses) and 1.6 (product development, health-care and education).

Sweden

Since 1993 the undergraduate teaching budgets of universities and university colleges have been awarded on the basis of the number of students and the effectiveness and quality of the teaching. Resources are allocated according to general three-year so-called Education Task Contracts which are contracts between the government and each of the universities and university colleges. The contracts contain operating guidelines and rules concerning reimbursements for total credits completed and specify the requirements for quality assessment (Lane, 1992).

The contract specifies a maximum amount that the government may award. The teaching grant is calculated on the basis of two factors. The first factor concerns the number of students registered. The size of this grant therefore varies from institution to institution. The second grant is based on the number of study credits achieved by the students (and therefore corresponds to the number of active students at a particular institution). The first factor accounts for approximately 40%, and the second factor approximately 60% of the total institution's teaching funding from the government. A third type of grant aimed at encouraging superior quality was proposed by the government, but was never implemented. This grant was to be called the Quality Premium, and the proposal was for it to cover approximately 5% of the budget (Högskoleverket, 1996a, and Swedish Ministry of Education and Science, 1993).

The teaching grant is calculated on the basis of the number of students and on student activity, but differences between the cost of teaching various subjects is also taken into account in the funding formula. There are tariffs which correspond to six clusters of disciplines: 1) humanities, theology, law, and social sciences, 2) natural sciences, engineering, pharmacy, and health studies, 3) dentistry, 4) medicine, 5) education, and 6) miscellaneous. The student tariff consists of an overhead tariff and an activity (i.e. direct teaching costs) tariff .

Research and postgraduate educational funding makes up a portion of the basic institutional grant for institutions which are granted permanent research funding. Special funding earmarked for particular expenses (such as research at institutions without permanent research allocations, clinical training and research, technical-scientific basic year and summer courses and external studies) may also form a part of the budget, as well as an allocation for rent of premises (Högskoleverket, 1997). There are three main ways of funding R&D within *högskolan*: core (institutional) funding, research council funding, and external funding.

In the early 1990's, money from the universities' main grants from the government (the first source of funding) made up 53% of the total financing of research in higher education institutes. An additional 29% came from the government via research councils and other governmental agencies (second source). The third source of funding amounted to a total of 12%, and included contributions from the business sector (including state-owned companies) amounting to 5% of the total, private non-profit institutions (5%), and sources from abroad (2%) (Statistiska Centralbyran, 1995).

In the Swedish system of higher education not all institutions are granted permanent research funding from the state. In terms of permanent research funding, a distinction can be made

between institutions which offer postgraduate programmes and ones that do not. Traditionally only universities and a few special institutes (such as the Karolinska Institute) offered postgraduate programmes and received permanent research funding. The divisions between the different higher education sectors, however, are beginning to blur a bit, and a few university colleges have been granted permanent research funding from the state. Permanent research funding is provided to each university by the Swedish parliament. This money is then divided among the different faculties. Institutions without permanent resources may compete for (mainly mission-oriented) research contracts from external sources, and may co-operate with universities. In addition, teachers at these institutes have various links to research, and there are special government grants available to promote these links (Swedish Institute, 1998).

United Kingdom

Funds for teaching, funds for research and income from tuition fees are separate and independent parts of the institutional allocation. The formula for teaching funds is price- (or efficiency-) oriented, the formula for research is quality-oriented, and the 'formula' for tuition fees is volume-oriented.

The HEFCE determines the available funds to be distributed for teaching from the overall amount available for higher education. This is subsequently distributed among institutions by using a so-called 'core-plus-margin' approach. In this approach the core is the part of an institution's grant for teaching that is based on the budget allocated in the previous year, thus providing financial stability. The core funding in the academic year 1997/98 makes up £2,346m, which represents 98% of the funds for teaching. The margin (£34m) represents the part of teaching funds intended for the funding of additional student places, the development of infrastructure and the support for specific initiatives in teaching. The margin is allocated on the basis of competition.

The institutional budget is partly influenced by the number of students. The funding contract between the institution and the HEFCE states that the institution has to teach a minimum number of students for the available grant. The contract states the number of students for which core funds for teaching are provided and also states the number of 'margin' (additional) students. If the institution enrolls fewer students, part of the grant will be withheld according to the shortfall in numbers. Institutions may also be penalised if they recruit more students for which they receive publicly funded tuition fees than the contract states. However, institutions are free to accept additional 'fees-only students' on a cost-covering basis.

Public funds for research are provided under the dual support system: the Funding Council contributes to the salaries of permanent academic staff, premises and central computing costs, and Research Councils provide for direct project costs and make a contribution to indirect project costs. As far as Funding Council (HEFC) funding is concerned, we note that, especially as a result of the research assessment exercises, research funds are tied increasingly to research productivity and research quality.

6.6 Appendix 2: Higher education systems and student support systems

Netherlands

Pupils graduate from secondary school (preparing for tertiary education) at the age of 17 (HAVO) or 18 (VWO)

Higher education consists of the university sector and the sector for higher vocational education (HBO). Next to these two major sectors higher education is also provided through the Open University.

The programmes in the HBO sector have a length of four years. HBO institutions offer both full-time and part-time programmes

A numerus clausus is applied to some study programmes because of labour market considerations

The HBO sector is the largest sector in higher education with about 276257 students in 1996. 84% of the students enrolled full-time and the other 16% enrolled part-time.

In 1997 the actual duration of study was 4.4 years.

Most programmes in the University sector have an official duration of four years. The actual average duration of studies at the universities varies between 5.5 and 6.5 year depending on the particular subject.

As in the HBO sector a numerus clausus is applied to some programmes. In 1996 there were 165880 students enrolled at universities.

The number of years that a students receives student support is limited.

Students pay a tuition fee. Students who are enrolled longer than 6 years are called institutional students and had to pay higher tuition until 1995/1996. From 1996/1997 onwards institutions may vary their charges for these students.

Part time students are charged a lower tuition fee than full time students.(country report Netherlands).

Germany

The higher education in Germany consists of a non-university and a university sector.

Fachhochschulen are part of the non-university sector. Each course of studies is divided into a basic section an advanced studies section, total duration of studies is usually eight semesters.

The prerequisite for the admission is a secondary school leaving certificate. In addition, previous related practical experience is required for admission to certain courses of study.

Almost all *Fachhochschulen* restrict the number of students admitted to certain subjects due to capacity constraints. The places in these subjects are awarded by the *Fachhochschulen*, usually on the base of average marks and waiting periods.

The actual duration of studies is on average one or two semesters more than the standard period.

The standard period of study at Universities is four to five years for most courses. On average many students take one or two years longer to finish.

Admission to any course of study requires the *Allgemeine Hochschulreife* or the *Fachgebundene Hochschulreife*. These are normally obtained after 13 ascending school years on completion of the upper secondary level. Other options are the Abitur examination for non-pupils and the university entrance examination for working people of particular intellectual ability.

For the majority of courses of study there are no nationwide restrictions on the number of applicants who can be admitted. In some courses there are nation wide quotas due to the large numbers of applicants and the insufficient number of places available. The criteria for the selection are the applicant's average mark in school-leaving examination and the period a students has had to wait (between sitting for the school-leaving exam and applying) is also taken into account.

University students are not classified in terms of year groups, but only according to the classes they are required to attend. If a student fails in a class, he must repeat that class only, without falling behind his fellow students. Study and examination regulations lay down the requirements for entry to a certain stage of studies. Intermediate and final examinations may be retaken once. In order to shorten study times in practise, this provision has been partly

amended, so that failed attempts at the final examination within the standard period of study are disregarded ("free attempts").

The drop-out ratio is not recorded within the official higher education statistics in Germany. Students in the tertiary sector who have no other means (mainly from their parents' income) of maintenance and financing a course of study can receive financial assistance (Bafög). The duration varies according to the course of study taken with a specific limit in each case. After their fourth subject-related semester, students only continue to receive funding if they have achieved the study result usually attained by that time. Half of the assistance is a grant and the other half takes the form of an interest-free state loan. The monthly amount depends on the student's own income and financial means as well those of his or her parents and spouse. In 1997 the proportion of students receiving Bafög assistance among all students enrolled was 18.7.

There are other sources of funding available to students for example from regional foundations.

In addition to the direct financial support available to students from low-income families, all students under the age of 27 benefit through the tax allowances to which their families are entitled.

No registration fees or examination fees are imposed for first degree courses.

Sweden

The Swedish institutions of higher education form one integrated system: the Högskolar.

In the Swedish policy document "Agenda 2000" (written in 1994) a number of priority areas for higher education were identified. Among these areas are:

- 1) Expansion of the higher education system
- 2) Improvement of continuing and life-long learning.

Ad1) The higher education system should be expanded, especially at the most advanced level. The government would like for the rate of participation in higher education in general, and in post-graduate degrees in particular, to be equivalent to that of Sweden's competitors. The government would like to see an increase in the number of degrees done in technical and scientific fields.

Ad2) Continuing and life long learning in adult life should be given the same priority as basic schooling and should be affordable to all. The higher education sector should be given incentives to develop continuing education programmes.

(country report Sweden p. 17)

According to the 1993 Higher Education Act there are two kinds of first degrees, general and professional.

General degrees: Diploma (*Högskole-examen*, at least two years of studies), Bachelor (*Kandidatexamen*, at least three years), Master's degree (*Magister*, at least four years).

Professional degrees (*yrkesexamen*): are awarded upon completion of programmes of varying length (two to five and a half years), leading to specific professions.

In order to be admitted to a higher education programme students must meet both general and specific admission requirements. A general requirement is the completion of upper secondary school or to have reached the age of 25 and have 4 years of work experience. This 25/4 regulation was introduced in 1977 and led to a lot of older entrants in higher education.

The specific requirements for a professional degree are standardised and determined by a national agency. Specific requirements for all other programmes are determined by the individual institution.

Since the 1980's there have been a number of initiatives aimed at stimulating the participation of young people entering higher education directly after completion of school.

Undergraduate student support

Financial aid is given in the form of government loans and grants (about 30% grant and 70% loan) which are not dependent on the income of the student's parents or partner. Students continue to qualify for government grants and loans as long as they complete their coursework within the required time limit. In general, a student may receive study assistance for a maximum of twelve terms (six years).

Postgraduate student support

Postgraduate students are not eligible for regular study assistance but they can apply for special post or fellowships, funded through the research funds allocated to each faculty.

Flanders

Higher education in Flanders comprises university education and one-cycle and two-cycle non-university higher education (*Hoger Onderwijs Buiten de Universiteiten - HOBU*).

One cycle courses take three years of study. Two cycle courses take at least 2 times two years of study. Information on the actual duration of studies is not available (trend report)

HOBU's provide both full-time and part-time education.

The university sector is smaller than the non-university sector, 58.467 versus 94.140 students in 1996.

There are 3 cycles at university:

- the '*kandidaat*' cycle: a bachelor's degree is obtained after basic university training of 2 to 3 years.
- the '*licentie*' cycle: a master's degree requires at least another 2 to 3 years, and even longer in some fields. Usually this degree entitles one start working professionally
- *doctoraat*, the third cycle: a doctoral degree can only be obtained by publicly defending a doctoral thesis at least two years after obtaining a diploma of the second cycle, or a two-cycle non-university higher education diploma in commercial sciences or commercial engineering

The year system is one of the characteristics of Flemish higher education. Students have to pass annual examinations in all course components. They are only permitted to begin the next year if they have successfully completed the previous one.

The rigid study year system is one of the main reasons for the poor pass rate.

Student support consists of a grant. There are a number of conditions. The right to a grant is limited to one complete basis course. Students have to collect 100% of the study load each year. If they fail, they will lose their grant. In addition all students, or rather their parents, are eligible for child allowance (for children under 25) and tax reductions. Students have to pay tuition fees (depending on the institutions and the programme they attend) and examination fees.

UK

The higher educational systems in England and Wales are quite similar whereas the systems of Scotland and Northern Ireland exhibit more significant variations.

The normal minimum entry requirement for a higher education degree program is two level A passes. There are other possibilities to enrol in higher education degree programs. Selection for all programmes depends on the ratio of applications to places. Institutions set their own requirements for grades of passes at A level. These requirements vary enormously according to the level of demand for particular subjects and particular institutions (Jenniskens p. 281).

The universities and the colleges offer several diplomas and degrees.

Certificates and diplomas of higher education are sub-degree courses of higher education, usually in a specialised or vocational subject. The Higher Vocational Certificate programmes

are in general part-time courses and take 2-3 years to complete. The diploma courses in general (leading to the Higher national diploma (HND)) are full-time programmes and also take 2-3 years to complete. The Diploma in Higher Education (DipHE) is a two year programme specific for the field of Education. Although in principle both certificates and diplomas are intended as vocational/terminal sub-degrees, in practice they can be used to gain entrance to full degree programmes offered by universities.

Undergraduate courses for a first degree (Bachelors degree) usually last three years, although some take longer, for example medicine, dentistry and veterinary science

Higher degrees are awarded at two levels, Masters' Degrees and Doctorates. Masters' degrees usually require a minimum of one year's full-time study following the Bachelor's degree (more commonly a Masters' degree takes two years), or the part-time equivalent.

Doctorates are postgraduate degrees awarded for an extended essay, known as a thesis. Many students study for the degree on a part-time basis.

Student aid is provided in the form of grants and loans. Depending on the status of full-time student and on parental income, students may be eligible for mandatory awards. Discretionary awards are made to students not eligible for mandatory awards. For instance, if they are part-time students. Of the total number of students, 75% receive an allowance. In principle, no direct distinction is made between the provision of student financial support and the performance of students. Student loans are available to all students. In 1997/1998 about 63% of all students took out a loan. In practice, the total amount of grants and loans together is inadequate to fund students. Students take part-time jobs and accumulate debts in the form of bank over-drafts. In the academic year 1999-2000 all grants are replaced by a system of loan-funding only.

Up to 1997/1998 the level of tuition fees were considerable in the UK, varying between 1300 and 4985 pounds, depending on the discipline. However, for the British full-time students these fees were paid by the Local Education Authorities (LEAs), which implied that the students themselves did not have to pay.

Since the academic year 1998-1999 full time students are charged 1000 pounds annually, which they will have to pay for themselves. Students from low-income families are (partially) exempted from paying tuition fees.



Center for
Higher Education
Policy Studies

Signs of the times

*Monitoring the position of Dutch
education: the O 8 project*

Stage two: digging deeper

Synthesis

Frans Kaiser
Lianne van de Maat

7 Synthesis

7.1 Introduction

The operational outset and the organisation of the project is geared towards the four educational sectors distinguished: primary education, secondary education, vocational education, and higher education. The analyses of the position of Dutch education in each of these sectors give a detailed and rich description of ‘where we are’ in the four sectors.

What the sector chapters do not provide are insights in the overall position of the national education system. What may we learn from using an overall system perspective? Are the scores on the sector levels related to each other, and how may characteristics on the system level affect the scores on the sector level? The emergence of that kind of questions and the drive to look for answers is the rationale of this synthesis chapter.

In this synthesis chapter, the national education system is the starting point. The data presented and analysed refer, primarily, to all levels combined. However, breakdowns by level of education are frequently used in our exploratory analyses of national differences at the system level. In those analyses we will use the results of the sector reports presented in the previous chapters.

For this report two indicators have been chosen to position Dutch education on:

- I. Total expenditure from both public and private sources for educational institutions plus public subsidies to households as a percentage of GDP
- II. Participation in education by sector and type of institution

The choice of indicator I is mainly based on public discussions in the Netherlands on the ‘6%-norm’. This benchmark (the score on total expenditure from both public and private sources for educational institutions plus public subsidies to households as a percentage of GDP for OECD total) was used in discussions to argue that Dutch education has fallen behind in educational expenditure.

The interpretation of the indicator is not straightforward. In EaG, OECD provides an interpretation of the indicator total expenditure on education as a percentage of GDP: ‘a measure of the relative share of a nation’s wealth that is invested in education’ (OECD, 1998, p 69). The indicator chosen in this report refers to investment in education as far as this investment is related to educational institutions. Investment on educational activities at institutions or entities other than educational institutions are not part of the indicator.

The choice of indicator II has a broader policy context. A well-educated population is seen as critical for the current and future economic, intellectual and social development of a country (OECD, 1999, p.149)

7.2 Expenditure on education as a percentage of GDP

Table 7.1: Total expenditure from both public and private sources for educational institutions plus public subsidies to households as a percentage of GDP, broken down by level of education, 1995

	pre- primary	primary	lower sec	upper sec	pre- prim + prim + sec	non- univ-tert	univ tert	tertiary	not allocated	all levels
NL	0.37	1.22	1.18	1.00	3.78		1.59	1.59		5.37

D					4.60	0.05	1.10	1.17	0.27	6.04
S	0.56	2.00	1.05	2.02	5.62			2.26		7.88
FI					m			m		m
UK	0.12	m	m	m	m			1.21		m
OECD total					3.8			1.7		6.0

source: OECD, UOE-datafiles; EaG98, pp. 81-83

note: In Flanders and the UK, private contributions to educational institutions are missing.
The OECD total is calculated as a weighted mean of the data values of all OECD-countries for which data are available or can be estimated. It reflects the value for a given indicator when the OECD area is considered as a whole. It can be significantly affected by missing data.

The Dutch score on this indicator on all levels combined is lower than the OECD total score (the infamous '6%-norm'). Furthermore, it is lower than the score for the two other countries for which data are available (Sweden and Germany).

The breakdown by level of education is problematic. Data on pre-primary, primary and secondary education are available for two countries only; an aggregate figure for these levels is available for three countries. The situation for tertiary education is slightly better: data are available (on the aggregated level) for four countries. Another problematic aspect of the breakdown is the lack of data on the breakdown between general and vocational (upper) secondary education (as mentioned in the previous chapters).

Although it is problematic, the breakdown by level of education reveals some interesting features. First it is interesting to see that on the lower level of aggregation, the Dutch scores are not that far behind the OECD total score as they are on the aggregate level. Second, compared to our countries of reference, the Dutch score is significantly worse than the Swedish and the German score on primary and secondary level, but it is better than Germany and the UK on the tertiary level.

The problems in availability of data for two out of five countries frustrate the comparative analyses. This has led us to look for an additional indicator. Since, data are available on the major component of indicator I (i.e., direct public expenditure for educational institutions) for all five countries we have chosen variable as additional indicator. Although there are some variations in the relative size of this component, it may tell us something on the direct public investment in education(al institutions).

Table 7.2: Direct public expenditure for educational institutions, as a percentage of GDP, by level of education, 1995

	pre- primary	primary	lower sec	upper sec	pre- prim + prim + sec	non- univ-tert	univ tert	tertiary	not allocated	all levels
NL	0.36	1.18	1.07	0.76	3.37		1.15	1.15		4.52
D	0.39	0.75	1.39	0.77	3.30	0.05	0.94	0.99	0.25	4.54
S	0.56	2.00	1.05	1.40	5.01			1.56		6.57
FI	0.48	1.06		2.38	3.92			0.87	0.24	5.03
UK	0.12	1.56		2.18	3.86			0.75		4.61
OECD total					3.4			0.9		4.7

source: UOE data-files

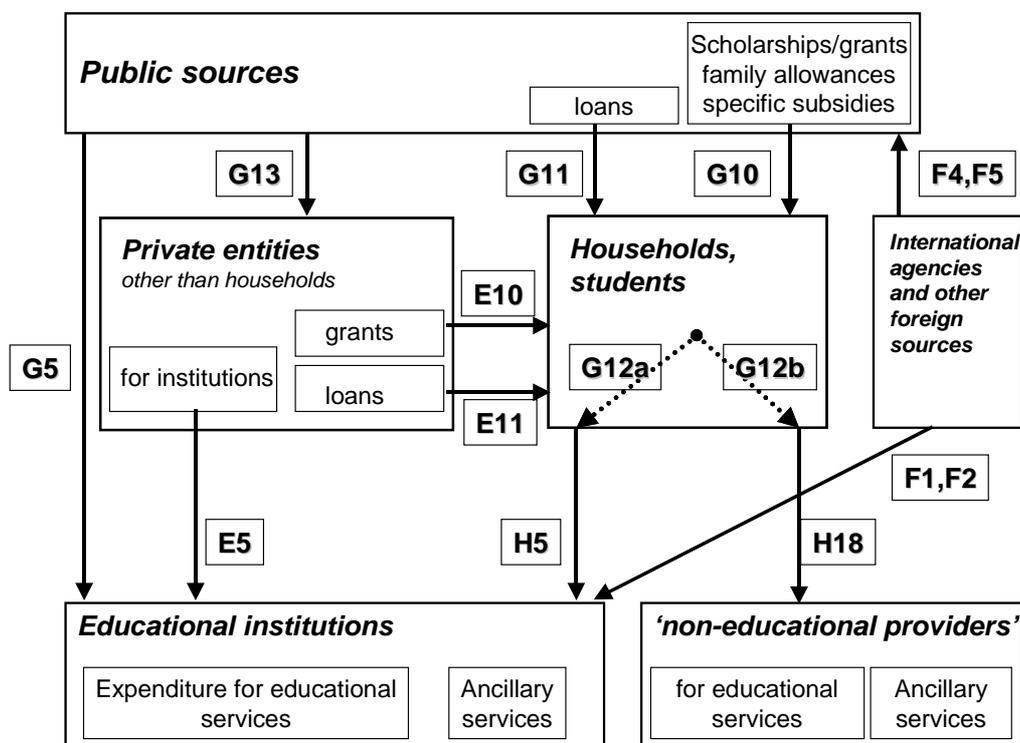
On this indicator the Netherlands score lowest on the aggregate level, but the relative difference between the Netherlands and OECD total and our countries of reference is significantly smaller than compared to indicator I (see Table 7.1).

Breaking down by educational level produces a similar picture on the combined primary and secondary level. On tertiary level, public investment in the UK is lower than in the Netherlands.

Before we turn to a description of the issues regarding coverage and structural differences we reflect on the logic of the financial data from the UOE-manual and how this relates to the indicators presented in Education at a Glance.

This logic is best presented with the diagram of flows of transfers for education, underlying the UOE datacollection.

Diagram 2 Flows of funds/transfers for education according to the UOE table FINANCE1



source: UOE Data Collection, Data Collection Instruments for the 1999 Data Collection on Education Systems, Definitions, explanations, and instructions UOE Data collection tables, p 62, OECD, Paris, 1999

note: The boxes next to the arrows indicate the rows in FINANCE1 in which the according funds/transfers should be reported.

Total expenditure from both public and private sources for educational institutions plus public subsidies to households (indicator I) is calculated as the sum of flows G5, E5, H5 and G12b. Direct public expenditure for educational institutions is represented by G5.

In the following sections we will refer to this diagram frequently.

7.2.1 Coverage

In this first section, we focus on differences in coverage, that may contribute to differences in the scores on the indicator.

Types of institution

Based on a quick survey (Pilos, 1999), we conclude that there are only minor differences in coverage, as far as type of institution is concerned. At the secondary level, agriculture programmes in Flanders are not included. In the UK some private secondary schools are not included. In Sweden, programmes of short duration at the *folkhogskola* are not included. In Germany some institutions for arts education are not included, as are the seminaries. However, all these omissions are marginal.

Ancillary services

Ancillary services are those services that are no educational services (in the strict sense) but that are required to enable pupils/students to consume educational services.

The major types of ancillary services are transportation, housing, and meals (or more in general: cost of living).

There are two issues that may hamper comparability: differences in national conception of what are educational and ancillary services and differences in the organisation of where educational and ancillary services are provided.

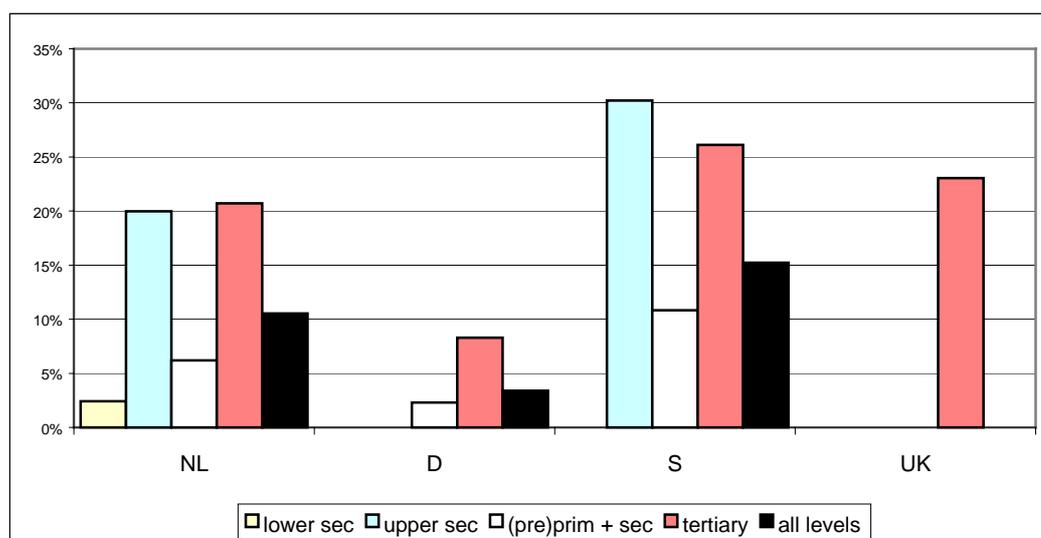
A full discussion on the issue of national conceptions of what educational services is beyond the scope of this report. The issue will be addressed in the OECD Second finance comparability study.

The provision of educational and ancillary services may be organised differently in different countries. Virtually all educational services are provided by educational institutions. The only exception in this respect known at this moment is the provision of books in secondary education. In the Netherlands, households buy books from non-educational institutions, whereas in other countries, books are provided by the educational institutions. National differences are more significant in the provision of ancillary services. If these services are provided by educational institutions they appear in the score on indicator I. If provided by other institutions, expenditures on these services do not appear in indicator I. If a relatively large proportion of services is provided by non-educational institutions, the true investment in education will be significantly higher than the score on indicator I.

Some remarks on the status of the data underlying Figure 7.1.

The reporting on direct transfers from households to non-educational institutions (H18) is relatively poor. There are no countries in which these expenditures are fully known. As an illustration we compare G12b (public transfers to households for expenditure on services provided by non-education institutions) to H18. H18 should not be smaller than G12b. It is plausible to assume that private households will invest more in education than they receive from government as support for these activities. However, in Sweden, Germany, Flanders, and the UK, G12b is exactly the same as H18. Only in the Netherlands, H18 is slightly higher than G12b. We therefore conclude that the coverage on H18 is limited (due to the exclusion of private contributions), leading to a score that is lower than the true value of H18 in all countries, except the Netherlands.

Figure 7.1: Direct transfers from households to non-educational institutions (H18) as a percentage of total direct transfers to educational and non-educational institutions for educational and ancillary services (G5+E5+H5+H18), 1995



source: UOE datafiles Finance

note: data on Flanders are missing

Although there are some serious doubts on the coverage of the data on H18 (see textbox above) we have some data available that allow us to estimate the relative size of services provided by non-educational institutions. Based on these data, we conclude that the true level of investment in education in Sweden is even higher than we concluded from the score on indicator I. Germany, scoring on indicator I higher than the Netherlands, scores lower on the ratio.

Loans

Part of the government subsidies to households are loans. Loans are reported on a gross base (loan repayments are not taken into account). It may be argued that for a proper reporting, net costs of loans should be taken. These net public costs are costs subsidies to enable lower interest rates, costs of guaranteed loans that are not repaid. It is obvious that the net public costs are substantially lower than gross public expenditure. The public subsidies to households are therefore significantly less than EaG makes us believe.

The data in Table 7.3 show that in Sweden, expenditure on loans is high. In Germany expenditure on loans is low.

If we take the position that net costs of loans should be reported instead of gross expenditure on loans⁴⁸, we can conclude that the high score of Sweden for indicator I is too high compared to the other reference countries. The exact score using net loan costs cannot be determined.

Table 7.3: Public transfers on loans to households (G11) as a percentage of GDP, 1995

	<i>(pre)primary and secondary</i>	<i>tertiary</i>	<i>all levels</i>
NL	0.02	0.06	0.07
D	0.00	0.03	0.03
S	0.11	0.39	0.51
FI	0.00	0.00	0.00
UK	0.00	0.08	0.08

source: UOE-datafiles (Finance1)

⁴⁸ and assume that the net costs are relatively the same in all countries

7.2.2 Structural differences

Length of programmes

This issue is discussed in section 7.3.2. Overall we may conclude that the length of programmes is shortest in the UK, and highest in the Netherlands. This high Dutch score is not in line with our assumptions regarding the relation between length of programme and score on indicator I.

Price of programmes

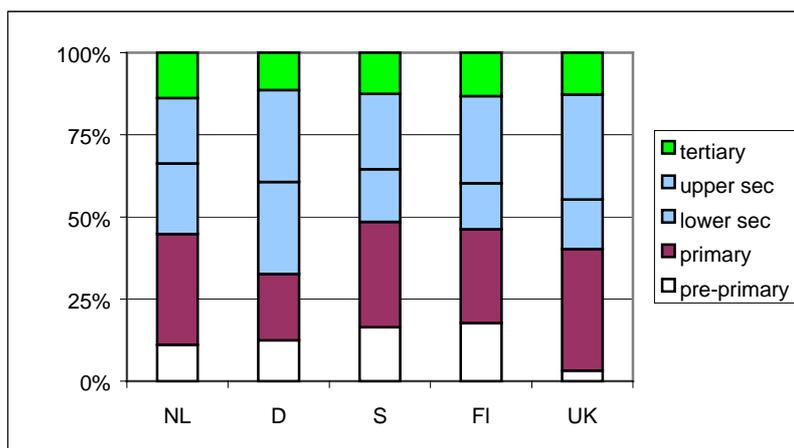
In primary education, the Netherlands and Flanders score high on the expensive programmes (special education). In the tertiary sector, these two countries score low on the proportion of expensive programmes. Based on the data available, it is not possible to determine what the effect on the system level will be.

Balance between the educational levels

We mentioned before that an educational system produces a number of outputs, of which teaching is the central one in this project. Teaching is not a monolithic product but a collection of programmes in various fields and levels. We assume that this diversity of the product teaching is related to expenditure: higher levels of education are more expensive than lower levels. Therefore a national system which has a relatively small tertiary sector is assumed to have lower expenditure than a system which has a large tertiary sector.

There is no clear picture emerging from figure 7.2. There is very little variation in the relative size of enrolment in tertiary education. The proportion of the ‘cheapest’ level of programmes (pre-primary and primary) is lowest in the UK and highest in Sweden. The low score in Germany is due to the different structure in which primary education is relatively short and lower secondary education relatively long. Upper secondary education is relatively large in the UK, followed by Germany, Flanders, Sweden, and the Netherlands. However, the differences are rather small, which is why we do not ‘score’ this factor in the overview later on.

Figure 7.2: Distribution of enrolment (headcount) by level of education, 1996



source: UOE-data-file Enrolment, enrolment1 row A1

When relating the relative size of the educational sectors to the relative level of expenditure on those sectors, we would expect that the Dutch score on indicator I would be higher than the Swedish score, due to the relative large primary sector in Sweden. This is however not the

case. Similar inconsistencies occur when relating the relative size of the educational sectors to the scores on indicator I alternative. Based on these findings we conclude that the balance between educational levels is not a significant factor in understanding the Dutch position on indicator I.

Teaching staff compensation

Secondary teacher salaries are low on Sweden and high in the Netherlands and Germany. These low salaries in Sweden are offset by low pupil staff ratios and low teaching time, compared to the Netherlands and Germany.

R&D expenditure

In higher education three types of activities are performed: teaching, research and community services.

In the INES data expenditures on teaching and on research (as performed in the higher education sector) are included. Expenditure on community services is usually excluded. The main part of the latter category is expenditures on university hospitals.

Since expenditure in the other educational sectors refer to teaching only, it may be argued that overall expenditure on education should reflect teaching activities only.

If R&D expenditure in the higher education sector is subtracted from total expenditure on education, the scores on indicator I are reduced drastically⁴⁹. The reduction is largest for Sweden, both for the main indicator as for the indicator on direct public expenditure. The relative reduction is largest in the Netherlands and smallest in the UK (tertiary education). However, the relative positions of the countries on both indicators do not change.

⁴⁹ The data on HERD originate from OECD, DSTI. When using the alternative indicator (direct public expenditure) only HERD funded by public sources is subtracted.

Table 7.4: Expenditure on education, all levels, as a percentage of GDP, 1995

	total expenditure		direct public expenditure	
	<i>incl HERD</i>	<i>excl HERD</i>	<i>incl publ HERD</i>	<i>excl publ HERD</i>
NL	5.37	4.77	4.52	4.01
D	6.04	5.63	4.54	4.16
S	7.88	7.09	6.57	5.91
FL	m	--	m	--
UK	m	m	4.61	4.35

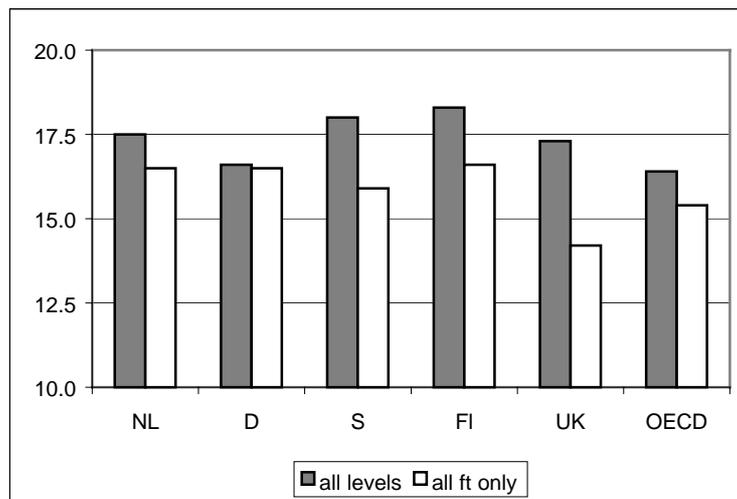
sources: HERD: DSTI, BSTI
UOE-datafiles

note: HERD: Expenditure on R&D in the higher education sector
DSTI data are available for Belgium only.

School expectancy in years

The assumption is that a high school expectancy will lead to a higher level of expenditure since educational services will be used longer than in case of a low school expectancy. Once again, Sweden scores high, as does Flanders. Based on our assumption and the scores on indicator I we expect a low score for the Netherlands. The Dutch score is lower than the Swedish score but higher than the German score, which is not in line with our assumption.

Figure 7.3: School expectancy in years, by mode of attendance, 1995



source: Education at a Glance 1998

Balance between public and private contributions to educational institutions

Another structural aspect that might affect, if not the score on the indicator, the interpretation of the indicator is the balance between public and private contributions. If the proportion of private contributions is high a high proportion of the responsibility for education is put in the hands of the private sector.

From Table 7.5 we learn that there are substantial differences between the countries in this respect. The private part is substantial in Germany and marginal in Sweden. Broken down by level it shows that this conclusion is a fortiori valid for secondary education (due to the large private contributions in German apprenticeship schemes). At the tertiary level the differences

are significantly smaller. For Flanders and the UK, no data on private contributions (in primary and secondary education) are available. This keeps us from assessing the impact this variable may have on the interpretation of the indicator scores.

Table 7.5: Private transfers to educational institutions as a percentage of total transfers to educational institutions, 1995

	pre- primary	primary	lower sec	upper sec	(pre)prim + sec	tert non univ	tert univ	tertiary	not allocated	all levels
NL	3.47	3.31	8.39	6.79	5.84		8.52	8.52		6.68
D					25.97	1.35	5.59	6.70	8.48	21.37
S				0.21	0.12			4.05		1.36
FI					m			m		m
UK	0.00				m			12.66		m

source: UOE data-files

note: $(H5+E5)/(H5+E5+G5+G10+G11+G13)$

7.2.3 Changes in the indicator score

Since 1993, there have been only minor changes in the score on indicator I. Since the OECD data are not designed to enable time series analysis, we treat these changes as not significant.

Table 7.6: Total expenditure for educational institutions (public and private sources) as a percentage of GDP, all levels

	1992	1993	1994	1995
NL	5.2	5.5	5.4	5.4
D	-	6.1	6.0	6.0
S	6.7	8.0	7.8	7.9
FI	-	-	-	-
UK	-	-	-	-

source: EaG, 1995-1998

note: - : missing

If we consider direct government expenditure, data for Flanders can be presented as well.

Table 7.7: Direct public expenditure for educational institutions as a percentage of GDP, all levels combined

	1992	1993	1994	1995
NL	4.6	4.6	4.5	4.6
D	-	4.5	4.5	4.5
S	6.7	6.7	6.6	6.6
FI	5.5	5.6	5.5	5.0
UK	4.9	4.7	4.6	4.6

source: EaG, 1995-1998

Once again the changes are insignificant, except for Flanders. However, Flemish statistics do not indicate the drastic decrease as presented in Table 7.7.⁵⁰

⁵⁰ Ministerie van de Vlaamse Gemeenschap, Departement Onderwijs, *Statisch Jaarboek van het Vlaamse Onderwijs*, Schooljaar 1998-1999, p.641

7.2.4 Changes in the factors described above

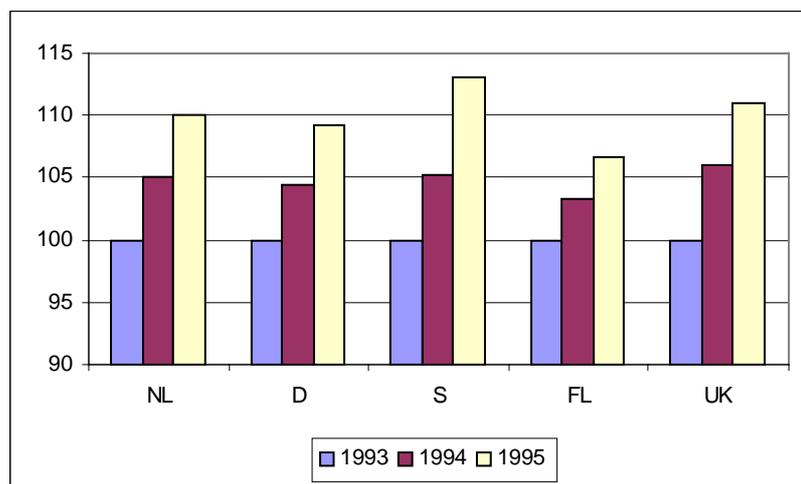
Coverage

The indicator score has not changed significantly in the period 1993-1995 in all countries except Flanders. There, direct public expenditure on educational institutions has decreased drastically in 1995. This may be due to changes in either GDP or the coverage of the INES data. Since national statistics do not indicate a drop in expenditure, it is not to be expected that change in the nominal expenditure has occurred.

GDP

The steepest incline in GDP can be seen in Sweden and the UK (period 1993-1995). A steep incline in the denominator of the declining ratio may explain part of the decline. The Netherlands had a growth of nominal GDP comparable to Germany. The GDP grew slowest in Flanders. Based on Figure 7.4 we would expect the strongest increase in Flanders. Since this is not the case in Flanders, we must conclude that the coverage of the INES data has changed.

Figure 7.4: Changes in nominal GDP, 1993=100



source: OECD, Economic outlook

7.2.5 Overview on indicator I

In the previous paragraphs we have looked for various explanations for the low Dutch position on indicator I. In Table 7.8, we put together these explanations and assessed the impact each of them may have on the low Dutch position. A + means that the score on indicator I is relatively high and if we would correct it for this factors, the score would end up lower. We did not quantify the impact on the score on indicator I because of the poor data situation and the uncertainty regarding assumptions underlying the assessment.

Table 7.8: Overview of possible explanations of differences in indicator scores and their relevance in the five countries

	NL	D	S	FL	UK
type of institution					-
ancillary services	?	?	?	?	?
books	-				
coverage H18		-	-	-	-
part non-educational inst.	-		--	?	-(tert.)
gross loan effect	+		++		+

length of programmes	+			-
R&D	++	+	++	?
schoolexpectancy	-		+	+
change in coverage				--

note: + : due to this factor the score on the indicator as presented in EaG is relatively high
 - : due to this factor the score on the indicator as presented in EaG is relatively low
 ? : the bias due to this factor could not be determined

Although the results are not completely consistent, an inspection of the table suggests that it is likely that the low position of the Netherlands on indicator I will deteriorate if the scores would be corrected for the factors listed. The results suggest also that the score of Sweden will decrease but whether this will lead to a change in the Swedish position cannot be determined.

7.3 Participation

The rate of participation is an indicator that has played an important role in education policy. Especially at the 'higher end' the rate of participation is seen as an indication of skills and knowledge present in society and of international competitiveness.

Education at a Glance presents an indicator on the rate of participation for all levels of education: net enrolment rates by single years of age. In Figure 7.5, the results for our selection of countries are summarised in one graph.

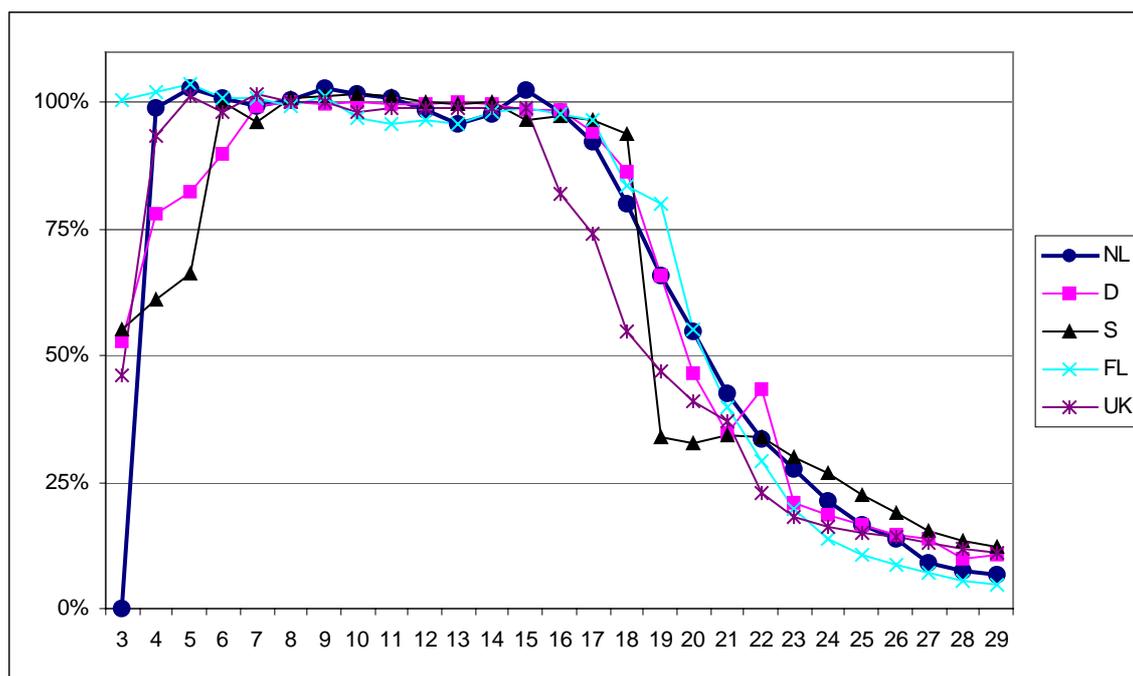


Figure 7.5: Net enrolment rates by single years of age, head count, 1996

source: UOE datatables

Although the lines in Figure 7.5 look very much like a Gordian knot, it is possible to draw some conclusions on the position of Dutch education (without using a sword).

In the age range of 7-15 years old, the differences between the countries are limited. In the category of 3 years olds, the Netherlands score lowest, whereas in the category of 4 and 5 years olds, the Netherlands scores high. In that category, Sweden and Germany score remarkably low, probably because of the exclusion of early childhood care.

In the range 15 to 21, the national scores differ substantially. The rate of participation drops for all countries but the starting point and the slope of the decline differs. In the UK the score drops at the start of the range. Swedish participation drops dramatically at the age category of 19, at which Sweden scores lowest. However, in the following years of age the Swedish score levels off. The Dutch score show the smallest slope, leading to the highest position at 21.

In the range 22 and older different dynamics can be seen. The Flemish score drops off relatively fast. Sweden comes out on top. At the first half of the category, the Dutch score is still second but by the end of the range, it is surpassed by the UK and Germany.

Summarising the scores on participation is tricky. The best we can do is based on visual inspection of the graph conclude that the Netherlands seems to score highest on overall participation, closely followed by Sweden. Germany comes in third. Flanders seems to score slightly worse than the Germany, whereas the UK comes out on the bottom of the ranking⁵¹.

7.3.1 Coverage

Types of institutions

Data for independent private institutions in Flanders are not included but this type of institution is not very common. In the UK data on vocational programmes at upper secondary level at independent private institutions are not included. Their number is small but not negligible.

Types of programmes

Postgraduate programmes (ISCED 7) are, according to the guidelines, comprised in the net enrolment rates. In Germany however, students pursuing doctoral studies are not obliged to register at university and it is not possible to estimate their number. Nevertheless, enrolment at ISCED 7 is quite small and does not have much influence on the results (EaG 98 p. 394).

7.3.2 Structural differences

Length of programmes

In *Education at a Glance*, it is concluded that the enrolment rate is not primarily influenced by the end of compulsory education but by the end of upper secondary education. The typical age pupils leave upper secondary education varies between the five countries: in the Netherlands this age ranges from 18 till 19 years, in Germany and Sweden it is 19 years, in Flanders it ranges from 18 till 20 years and in the UK from 16 till 18 years.

The end of the upper secondary programmes is in Sweden, Germany and Flanders at the age of 18, in the UK at 17 and in the Netherlands at 17-19. This is in line with the EaG conclusion and the scores on indicator II.

The length of programmes in tertiary education differs also between countries. In the UK the undergraduate programmes are shorter than in the other countries. In the Netherlands there are only long programmes (4 years), whereas in Sweden, Germany and Flanders short programmes (two or three years) are available as well.

Overall we may conclude that the length of programmes is shortest in the UK, leading to a lower rate of participation, and highest in the Netherlands, leading to a higher level of participation.

⁵¹ A tentative calculation of an unweighted average net enrolment rate shows similar results, see Table 7.12.

Time to complete

Grade repetition in primary and secondary education is far lower in the UK and Sweden than it is in Germany, Flanders and the Netherlands.

In Dutch tertiary education most students need more time to complete than the official length of the programmes. At the *hogescholen* students need on average around 10% more time. At universities students need on average 30 to 40% more time to complete. At German *Fachhochschulen*, students need on average around 25% more time than the official length of the programmes. At universities, this percentage is between 25 to 40. For Flanders and the UK no information on the actual duration of study is available. The modular system in Sweden is the prime reason for the lack of this information in Sweden.

Mode of enrolment

The OECD indicator net enrolment is based on head counts. This means that no distinction is made between full-time and part-time students.

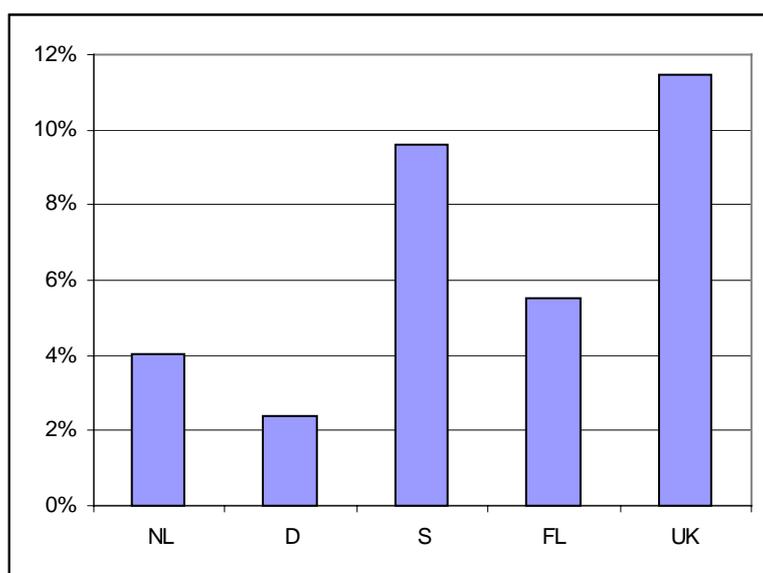
A high proportion of part-time pupils/students enrolled will inflate the rate of participation. Germany scores lowest on this indicator: 0.4% part-time students. Flanders (4.5%) and the Netherlands (6.5%) have a higher score. Sweden has a second position (12%) but the UK has the largest part part-time students/pupils enrolled: 28.7%.

To get a rough indication of the impact this may have on the level of enrolment, we use a fte conversion factor of 2. If part-time student/pupils would be treated as 0.5 full time students/pupils, enrolment would remain more or less the same in Germany, would be over 2% lower in Flanders, 3% lower in the Netherlands, over 6% lower in Sweden and almost 17% lower in the UK.

Proportion of mature students

The rate of participation is presented for the range of 3 years olds till 29 years olds. This may have a direct effect on the indicator scores. If country A has relatively more students older than 30 years than country B the indicator underestimates the rate of participation in country A. In excluding students aged 30+ country A 'loses' more students than country B.

Figure 7.6: Enrolment aged 30 years and older as a percentage of total enrolment, headcount,



1995

source: UOE datafiles

Due the large proportion of mature students, especially if compared to Germany, the position of the UK may improve. Although it is not possible to give an exact score, it looks like the UK will pass Germany in the ranking. The ranking of the Netherlands may change as well. Sweden and the Netherlands both score high. The difference between these countries is marginal. The high Swedish score in Figure 7.6 brings us to the conclusions that the Netherlands and Sweden will switch position due to the differences in proportion of mature students.

7.3.3 Changes in the factors described above

No time series available

7.3.4 Overview participation

Table 7.9 Overview of possible explanations of differences in scores on indicator II and their relevance in the five countries

	NL	D	S	FL	UK
type of institution					–
type of programme					
length of programmes	+				–
time to complete	+	+		+	
mode of enrolment	+3%	0	+6%	+2%	+17%
mature students	–		– –	–	– –

note: + : due to this factor the score on the indicator as presented in EaG is relatively high
 – : due to this factor the score on the indicator as presented in EaG is relatively low

The scores on the factors discussed in this paragraph suggest that the high score of the Netherlands on rate of participation may be due to the factors listed. The Netherlands score relatively positive, suggesting that the score would be lower if corrected for these factors. The low score of the UK may also be due to the factors, although here the situation is less clear.

7.4 References

- OECD, *Education at a Glance, OECD Indicators*, OECD/CERI, Paris, 1995
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 Pilos, Spyridon, *Quick survey on the coverage of the UOE data collection, synthesis document*, presented at the thirteenth meeting of the technical group, INES, OECD, Paris, October 1999

7.5 Appendix

Table 7.10: Scores on indicator I and indicator I alternative, including expenditure 'not allocated'

ind I	pre- primary	primary	lower sec	upper sec	(pre)prim + sec	tert non univ	tert univ	tertiary
NL	0.37%	1.22%	1.18%	1.00%	3.78%		1.59%	1.59%
D					4.84%	0.05%	1.10%	1.20%
S	0.56%	2.00%	1.05%	2.02%	5.62%			2.26%
FI								
UK	0.12%							1.21%
ind I alt (G5)								
NL	0.36%	1.18%	1.07%	0.76%	3.37%		1.15%	1.15%
D	0.43%	0.83%	1.43%	0.83%	3.52%	0.05%	0.94%	1.02%
S	0.56%	2.00%	1.05%	1.40%	5.01%			1.56%
FI	0.52%	1.13%		2.44%	4.13%			0.90%
UK	0.12%	1.56%		2.18%	3.86%			0.75%

source: OECD, UOE-datafiles

Table 7.11: Scores on Indicator I, including and excluding public transfers on loans

	including transfers on loans			excluding transfers on loans		
	(pre)primary and secondary	tertiary	all levels	(pre)primary and secondary	tertiary	all levels
NL	3.78	1.59	5.37	3.76	1.54	5.30
D	4.60	1.17	6.04	4.60	1.14	6.01
S	5.62	2.26	7.88	5.51	1.87	7.38
FI						
UK		1.21			1.14	

source: OECD, UOE-datafiles

Table 7.12: Average net enrolment rates by age bands, head count, 1996

	NL	D	S	FL	UK
total	66.9%	65.8%	65.0%	65.6%	62.1%
0-6	76%	76%	71%	102%	85%
7-14	100%	99%	100%	98%	99%
15-21	77%	75%	69%	79%	62%
22+	17%	19%	22%	12%	15%

source: OECD, UOE-datafile