

SPRINGER BRIEFS IN EDUCATION

Jaap Scheerens

Hans Luyten

Jan van Ravens *Editors*

Perspectives on
Educational Quality
Illustrative Outcomes
on Primary and
Secondary Schooling
in the Netherlands

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Perspectives on Educational Quality

Illustrative Outcomes on Primary and
Secondary Schooling in the Netherlands

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Preface

Although the quality of education is a topic of every day discourse, it is a complex concept. When the term is used in an empirical, analytical context, more precise definition is required. The first part of this book is dedicated to a conceptual analysis of the term quality applied to education. In [Chap. 1](#) an overall quality framework is developed. In [Chap. 2](#) this conceptual framework is further operationalized to a set of educational indicators. These indicators in their turn can be used to guide the collection of empirical data in the context of educational monitoring and evaluation. The second part of this book applies the framework in a quality review of primary and secondary education in the Netherlands, frequently applying internationally comparative information. The Dutch case study starts out with a description of the Dutch educational system and summarizes earlier quality reviews ([Chap. 4](#)). Next, in [Chap. 5](#) achievement and attainment indicators regarding the levels and equitability of Dutch primary and secondary education are presented, while in [Chap. 6](#) the focus is on the attainment of educational levels and the selectivity of the system. In the final chapter the balance is made up, one of the conclusions being that most room for improvement is to be sought in the improvement of attainment indicators, evoking higher participation rates in higher education.

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Part I
Conceptualisation of Educational Quality

Chapter 1

Perspectives on Educational Quality

Abstract In this chapter, a systems model is presented, which can be used as a basic template when defining and quantifying the quality of education. In this model, education is viewed as a ‘production process’ whereby input is transformed into output. Various interpretations of ‘quality’ can be defined further to the relative importance of certain components within the input-process-output-context model and the specific relationships between those components. As such productivity, effectiveness, efficiency, equity and adaptability or responsiveness are discussed. Alternative perspectives on educational quality are discussed by discovering the perspectives of different authors and stakeholders and by referring to different schools of thought (e.g. a humanist versus a behaviourist orientation). An important premise that results from these analyses is that facets of educational quality are amenable to empirical verification and analysis. Educational outcomes are predominant in most perspectives on quality in education.

Keywords Educational quality • Input, process and outcome indicators • Productivity, Effectiveness, Efficiency, Equity, Responsiveness • Alternative views on educational quality • Disjointed view of educational quality

1.1 Introduction

In this chapter a broad perspective will be taken in defining educational quality, in which questions on “doing the right things” in education as well as “doing things right” have a place.

Analytically an input–process–output framework is seen as the most useful “meta-framework” to compare different perspectives on educational quality.

1.2 Defining the Quality of Education

1.2.1 Perspectives to Define “Quality” in the Context of Education

What is quality? In the book “Zen and the art of motor cycle maintenance” the author, Robert M. Pirsig describes an odyssey in which the underlying theme is an effort to define quality. The book describes in fact two journeys: one in the realm of major philosophical questions as the mind/body problem and the subjective versus objective nature of quality. The other journey is a motorcycle trip, in which maintenance problems appear to require a specific attitude. The conclusion of the philosophical exercise is the statement that quality is neither a part of matter nor a part of the mind. Quality is a third identity, about which the author concludes that it is an event at which awareness of the subjects and objects are made possible. “This means quality is not just the result of a collision between subject and object... The quality event is the *cause* of the subjects and the objects, which are then mistakenly presumed to be the cause of the quality!” (Pirsig 1999, pp. 233–234).

In the more practical interpretation related to the story of motor cycle maintenance the book provides a strong hint that quality is about doing things with care. Doing things with care involves the *process* of doing (in his case motor cycle maintenance), which in its turn seems to be stimulated by the *product*, which at a given point can be seen with a certain amount of satisfaction. In this view, subjective and objective aspects seem to be united by the feedback provided by a smoothly running engine.

When discussing the quality of education in this book there will be a strong emphasis on what is objectively measurable and practically controllable. Even within that inevitably reduced frame of reference there are many different perspectives. Pirsig’s more esoteric vision, however, is important to make us aware of this necessary reductionism and to point at more fundamental distinctions, particularly the point that it makes a difference who, which subject, or which “actor” poses the quality question. The quality of education is likely to be defined differently from the point of view of national policy makers, school governors and managers, teachers, students and the parents of students, although there is likely to be a common core of interest in educational outcomes. Without reverting to vagueness, Pirsig’s analysis also points at “qualitative” aspects: aspects of quality that are hard to grasp, that are not easily captured or measured. When asked about the key characteristics of “good” schooling, a very senior colleague recently referred to a school he had visited in India. It was not a proper school, in the sense that there was a real school building. Children sat on stamped earth underneath a shelter of corrugated iron sheets. There was just one textbook for the whole class of students. But even in these primitive circumstances the colleague noticed qualities in the attention of the students and the dedication of the teachers that brought him to this qualification. I had somewhat similar feelings when I visited a remote school in Jamaica last year. Here again the poverty and lack of resources was painfully obvious, yet the task related atmosphere, the meticulous way in

which the building and the grounds were kept and the reverence with which the threadbare textbooks were handled, struck me as impressive.

Having said all this, let us turn to that part of educational quality that has been defined in more objective ways, has been captured by means of scientific methods and has also been studied with an eye to improving quality through methods of planned change. Seen from this angle, education quality can be clarified on the basis of a conceptual framework that describes education. The most frequently used way to do this is to depict education as a productive system, in which inputs are transferred into outcomes. The central “black box” can be defined at various levels; as far as education is concerned this could be the national education system, the school or the classroom.

I am well aware of the fact that the choice of this framework is already a narrowing down of the scope of the quality issue, although, as will be shown, it is still global and allows for a range of different priorities (this will be further illustrated in subsequent sections). An alternative approach would have been one that is more evolutionary, more concentrated on endogenous growth and with a stronger emphasis on organisations as self-referential systems (Luhmann 1995).

1.2.1.1 Quality Perspective Defined on the Basis of a Systems Model of Education

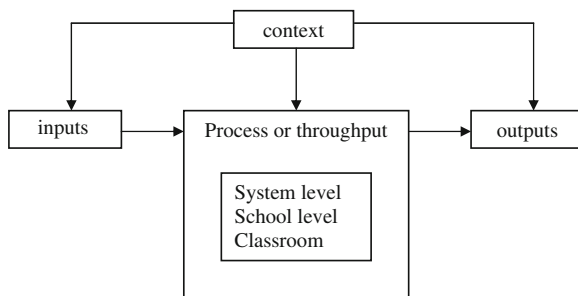
Steps in elaborating the model of education as a production system are:

- (a) including a context dimension that functions as a source of inputs and constraints but also as a generator of the required outputs that should be produced;
- (b) differentiating outcomes in direct outputs, longer term outcomes and ultimate societal impact;
- (c) recognising the hierarchical nature of conditions and processes, putting public education down as an example of “multilevel governance”.

The model depicted in Fig. 1.1 shows this framework.

When examining this basic framework, at least six ways in defining education quality can be chosen, by emphasising certain parts, aspects or relationships from the basic framework.

Fig. 1.1 A basic systems model on the functioning of education



The Productivity View

According to this view, the success of the systems is seen as depending on the attainment of the aspired outputs/outcomes. For example, in the sense of a satisfactory quantity of school-leavers that has attained a specific level, or in terms of an acceptable level of employment of students with a certain diploma. According to this view output/outcome/impact indicators are predominant or even the only type of quality indicators that need to be monitored. It should be noted that in this rather formal and abstract presentation there is not yet any decision on what kind of outputs and outcomes are prioritised and ultimately measured. In fact, a broad range of skills and personal attributes might be considered. These may range from basics like literacy and numeracy, to “intra-personal” skills like motivation and perseverance and learning to learn, “inter-personal skills” like capacity for teamwork and leadership and other skills like problem-solving capacity and computer-literacy might be considered, as well as competencies associated with active citizenship (cf. OECD 2000, p. 19).

The Instrumental Effectiveness View

According to the instrumental effectiveness view there is a clear perspective for the selection of context, input and process indicators, namely their expected effect on outcomes. To the extent that effectiveness or production functions can be completely specified, in other words outcomes can be totally predicted, context, input and process indicators could replace outcome indicators. The value of certain levels and forms of inputs and processes is determined by their instrumental potential. Clearly, the instrumental perspective offers a more dynamic handle for policy, as it considers not only given constraints but also factors that are policy malleable.

The Equity Perspective

When inputs, processes and outcomes are analysed for their equal or “fair” distribution among participants in education with different characteristics, equity is the primary facet for judging educational quality.

The Efficiency Perspective

This perspective can be seen as a further demand on the productivity and instrumental effectiveness view, by considering the highest possible outcomes at the lowest possible costs.

The Adaptation Perspective

This view “transcends” the instrumental effectiveness perspective by not only looking at the question of how to do things right, but first of all considering the

question of how to do the right things. In other words, the adaptation perspective would lead to a critical analysis of educational *goals*. Conditions that allow for a continuous sounding of changing contextual conditions for the education province would receive emphasis as *means*, while labour market outcomes or “social capital” could be considered as *ends*, according to this view. The adaptation perspective would also cover defining the school curriculum as meant to adapt to the specific environmental context and local and national culture. As such, this perspective could be seen as an important complimentary perspective to the instrumental effectiveness view, which takes more or less universal standards in basic subjects for granted. Responsiveness to external demands and expectations is the central quality criterion, as seen from the adaptation perspective.

The Disjointed View

Combinations or relations between the various elements of Fig. 1.1 were central in the previous views, which represent a particular perspective on education quality. An alternative view is to consider each element “on its own” and judge whether it is manifested in an acceptable way or at an acceptable level. In this way one could, for example, consider levels of teacher training, as a (minimum) requirement for being allowed to function as a teacher, class size could be judged in terms of being acceptable for being “manageable” for teachers and students and teaching strategies could be rated according to norms of good practice.

The disjointed view is descriptively the simplest, although in an evaluative sense it is the most arbitrary one.

When considering the way these perspectives on educational quality are being reflected in the composition and use of indicator systems, it appears that the last perspective, the “disjointed view” is predominant (for further discussion, see the section on measuring educational quality).

In summary, the analytical systems approach “generates” facets of educational quality that depend on evaluating input, process, outcome and context indicators, either separately (as in the disjointed view) or in certain combinations:

- by judging outcome indicators, like achievement levels or numerical attainment indicators (productivity);
- by judging inputs and processes for their relevance in optimising outcome indicators (effectiveness);
- by judging effectiveness enhancing input and process indicators for their cost effectiveness as well (efficiency);
- by judging equitable distribution of input, process and outcomes indicators (equity);
- by judging the responsiveness of educational systems in choosing goals (desired outcomes) in such a way that demands from the society at large (context) are being met.

These quality perspectives can be defined at the level of national educational systems, schools and classrooms.

1.2.2 Educational Quality as Defined from Sociological Functions

An approach that stems from the sociology of education is defining the quality of education in terms of the degree to which societal functions are met. Core functions that education should fulfil are qualification, selection and allocation (Peschar and Wesselingh 1985).

The qualification function of education is about students having attained those skills and competencies that are necessary in further educational careers or for successfully entering the labour market. This implies two things: first that education addresses the relevant skills and competencies and second that these skills and competencies are indeed mastered when a track of schooling has been terminated. In our terminology this issue of reaching the desired outcomes of education was indicated as productivity but is also sometimes referred to as effectiveness (Borghans et al. 2007).

The selection function is about allocating students to appropriate tracks or difficulty levels within the education system and in this way leading them up to different levels of end certification. One could say that the selection function is about using the assessment of qualification for purposes of sorting students into different compartments within educational programmes at a certain levels.

The allocation function does exactly the same thing but with reference to school follow-up education and external, societal positions.

As it comes to realising qualification, selection and allocation outcome indicators, both achievement and attainment *outcome* indicators are crucial. This corresponds to what we would call the productivity view of educational quality but others call the effectiveness view.

Following Borghans et al. (2007), qualification, selection and allocation can also be analysed from the perspective of efficiency.

Efficiency of qualification is described as efficiency in “learning attainment”, as caused by the differential effectiveness of teaching methods, school organisational arrangements and instruction strategies. This is the subject matter of what in educational science is usually named “educational effectiveness”, where the effect of malleable school conditions, after adjusting for prior achievement or relevant student background characteristics, on student achievement and attainment is the central issue.

Borghans et al. (2007) also discern the efficiency of the selection function, which they define as the internal attainment of an educational programme. This is about attainment indicators like the proportion of students that obtain a diploma in the minimum study-time, drop-out rates. In addition, they define the external attainment of an educational programme as the cost benefit ratio for society and individuals. Costs are the investments and lost opportunity costs of having

followed an educational programme. Benefits are material and immaterial benefits for individuals as well as economical growth for the society.

In summary, it can be said that the sociological perspective in defining educational quality in terms of the degree to which specific functions are met, does not provide anything new as compared to the systems perspective that was discussed above. Achievement and attainment indicators are central and instrumental effectiveness and efficiency are covered as well, although there may be a somewhat different use of the terms. It is striking that in a view that puts the issue of education and society central, there is apparently little place for dealing with the adaptation perspective, the view according to which the education systems tries to be responsive to societal needs.

1.2.3 Definitions of Educational Quality Applied to Schools as Organisations

In this section the level of the school as an organisation will be used to specify educational quality in more operational terms. As will be shown in the section on measuring quality, even if the monitoring system is primarily oriented at the macro or system level, it is important to “drop down” to the school level and include data on aggregation levels that are lower than the system level.

Two conceptual frameworks will be used to elucidate choices with respect to quality: (i) the basic model from systems theory introduced in the above and “filled out” by using results from empirical school effectiveness research and (ii) perspectives on organisational effectiveness.

1.2.3.1 The Model of Empirical Educational Effectiveness Research

Below is a somewhat different presentation of the systems model that was introduced in the previous section. Here, the central box is defined at the level of an organisation, in our case, a school. The functioning of the organisation is again seen as inputs flowing into the central box and by outputs being “somehow” produced (see Fig. 1.2).

In Fig. 1.2 it is assumed that within the black box *processes* take place that transform inputs into outputs. When it is attempted to further describe these processes in terms of which process characteristics are most effective in obtaining desired levels of outputs, the model of Fig. 1.1 becomes more elaborate. This

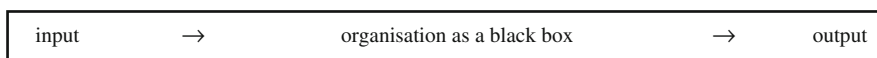


Fig. 1.2 The organisation as a black box

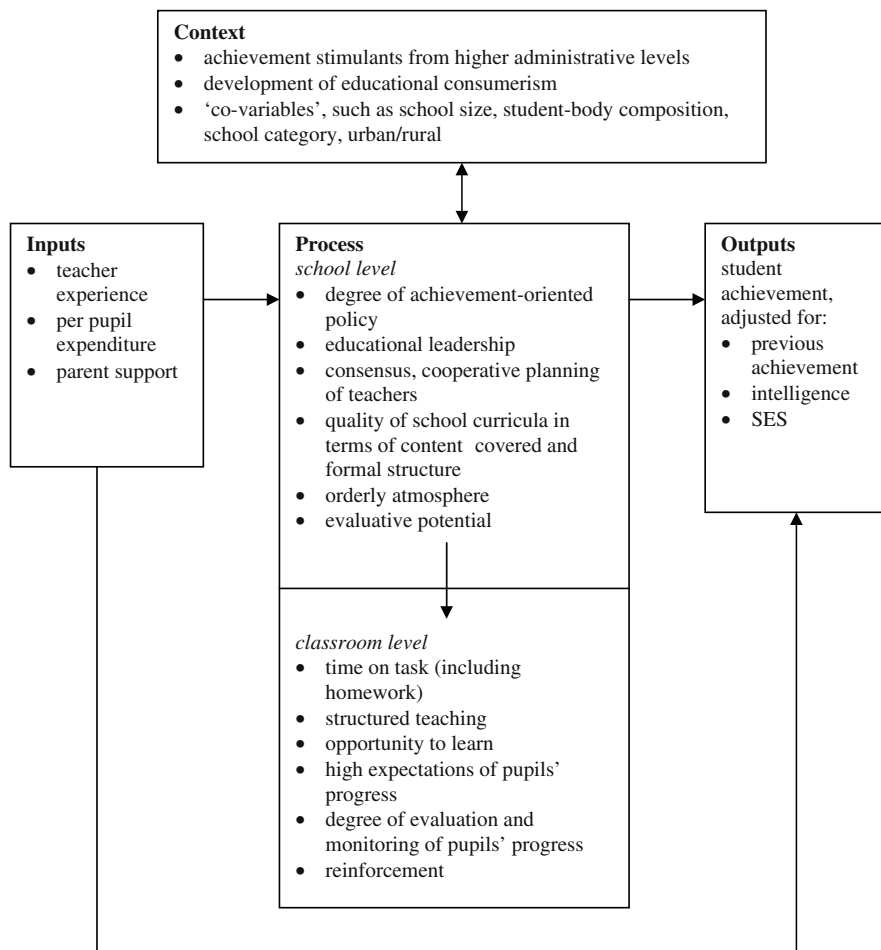


Fig. 1.3 A summary of the findings from school effectiveness research, from Scheerens (1989)

model is often used as a conceptual framework to summarise the results of school effectiveness research.

In Fig. 1.3, an example of such an ordered summary is shown (cf. Scheerens 1989).

The notion of quality inherent in integrated school effectiveness models like the one in Fig. 1.3 is that:

- outputs are the basic criteria to judge educational quality;
- in order to be able to properly evaluate output, achievement or attainment measures should be adjusted for prior achievement and other pupil intake characteristics; in this way the value added by schooling can be assessed;

- (c) in selecting variables and indicators to assess processes and context, one should look for those factors that have been shown to be correlated with relatively high output, adjusted in terms of “added-value” as described above;
- (d) the model is a multi-level model, uniting effectiveness enhancing conditions at system, school, classroom and individual student levels.

It should be noted that educational effectiveness models do not prescribe the types of outputs that should be used to assess quality. In principle all types of outputs, cognitive or non-cognitive, could be inserted in the right-hand box of Fig. 1.3. In the actual practice of school effectiveness research, however, cognitive outcomes, mostly in terms of achievement in core-subjects like reading, arithmetic, and language, have predominated. The process factors shown in the middle section of Fig. 1.3, might well be somewhat different if non-cognitive outcomes or less subject-matter tied cognitive outcomes had been used in the actual research studies.

It should also be noted that there is still quite a lot of uncertainty about the selection of process factors such as indicated in the figure. The available knowledge base is far removed from a situation where it would be possible to make precise predictions on the likely added value of schooling, given the state of certain processes and inputs.

To the degree that educational effectiveness models provide an acceptable operational definition of quality, they can also be used as a guideline in the design of instruments for school evaluation and school self-evaluation. The previously mentioned points: *a* (focus on outcomes), *b* (proper adjustment of outcomes) and *c* (measure process characteristics associated with high added value) mentioned in the above can be read as guidelines to make choices with respect to instrumentation.

However, a broader perspective on quality can be considered as well. Such a broader perspective can be obtained from multiple orientations towards organisational effectiveness that will be discussed in a subsequent section. First, some more clarification will be given about the way equity and effectiveness perspectives can be defined and, to some extent, also combined.

1.2.3.2 Equity and School Effectiveness

Historically the “school effectiveness movement” was strongly oriented towards students in disadvantaged neighbourhoods, inner city schools in the US and the UK. Moreover, evaluations of major compensatory programmes in the US, such as Head Start and Follow Through, gave a strong impetus to research in which alternative instructional approaches were compared for their effectiveness for disadvantaged learners. The results were strikingly similar to the results of school effectiveness studies at the time, cf. Ralph and Fennessey (1983) and Scheerens (1987). To the extent that these early studies have a strong impact on the knowledge base on educational effectiveness as of today, one might say that there is a certain bias on “what appears to be working” for students at the low end of the achievement distribution. When considering the analytical model of empirical

school effectiveness research, there are several ways in which equity-related issues can be brought into the picture.

First of all, equity of achievement outcomes can be studied by considering measures of between student and between school variation. Since the primary interest of educational effectiveness studies is to assess the impact of malleable factors over and above student background characteristics, achievement results at the individual student level are “adjusted” for the impact of these variables. At the same time there appears to be an additional impact of the *average* of relevant student background characteristics, such as socio-economic status on achievement. To the degree that these student level background conditions at individual or school level have a larger impact on achievement, school systems can be judged as comparatively selective versus equitable (the debates about the PISA results for a country like Germany illustrate this issue).¹

Secondly, school effectiveness research, or surveys on effectiveness enhancing school conditions, can provide information about the extent to which the levels of inputs and process are the same (or different) in all schools and all provinces within countries. In other words, how equitably are the resources or processes allocated or distributed across schools and provinces within a country? When, for example, the teaching staff in each school is described, can it be said that all pupils—in whichever school they are—have the same quality of teachers? Or the same provision of resources, and so on? It is important to view the levels of input and process provision and equity at the same time. If the achievement levels are all low (and much lower than they should be) but there is very little variation among schools, then we know that the schools all have the same very low level. The patterns of variation in school provisions are relevant information for educational policy. If the levels of school resources are very different among schools within provinces, then it could be seen as the job of the provincial authority to do something about this. If there are large differences among provinces but few differences among schools within provinces, then the national authority must do something to ensure more equity among provinces.

Assuming that there is some measure of the socio-economic status (SES) composition of the student body within schools, then it would also be possible to examine if it is the poorer SES schools that have fewer provisions and the higher SES the higher levels of provision. Similar kinds of questions could be raised with respect to other grouping variables of schools, like: urban/rural and private/public.

A third way of thinking of equity is based on the philosophy of compensation and “positive discrimination”. Related and more neutral sounding terms in education are: adaptive teaching and differentiation within classrooms. The basic idea is that something extra is done for students that are in some way or another “disadvantaged”. Examples are smaller classes, extra tutoring, adaptive teaching approaches,

¹ The German Pisa results were characterised by relatively low average achievement levels; a large variation between students and between schools and a relatively strong impact of SES-related background characteristics on achievement. The categorical organisation of the German school system was seen as one of the causes of this state of affairs.

increased learning time. School surveys can capture such measures or programmes in a descriptive way. The distribution of “extras” for disadvantaged learners across schools within countries could also be seen as a specific example of equity in the sense of the first meaning, stated above (equitable distribution of inputs).

A sophisticated combination of “school effectiveness” and “equity in schooling” is addressed in studying what is known as “differential effectiveness”. This branch of school effectiveness research specifically addresses the question which kind of school—and instructional conditions work best for disadvantaged students as compared to more “advantaged” students.

1.2.3.3 Multiple Criteria to Assess Organisational Effectiveness

In organisation theory the question about the “goodness” or quality of an organisation is usually framed by referring to the *effectiveness* of the organisation. The term effectiveness literary means “goal attainment”. So the implicit assumption is that organisations are oriented towards certain goals or objectives. This assumption is generally accepted, at least as a useful working hypothesis. It is also less restricted than it may seem at first sight. In fact, quite different types of goals or types of “effectiveness criteria” are considered. An effectiveness criterion could be defined as any kind of dimension that expresses a desirable characteristic of central importance in evaluating the functioning of an organisation. *Examples could be the examination results of the students but also indications that the parents of the pupils are satisfied with the school.*

Organisational theorists often adhere to the theory that the effectiveness of organisations cannot be described in a straightforward manner. Instead, a pluralistic attitude is taken with respect to the interpretation of the concept in question. By that it is assumed that which interpretation will be chosen depends on the organisation theory and the specific interests of the group posing the question of effectiveness (Cameron and Whetten 1983, 1985; Faerman and Quinn 1985). The main perceptions on organisations, which are used as background for a wide range of definitions of effectiveness, are summarised in the table below. For a fuller description of the different organisation theories see Scheerens et al. (2003) (Table 1.1).

The diversity of views on effectiveness which organisational theory makes, leads to the question which position should be taken. Should we indeed operate from a position of there being several forms of effectiveness, should a certain choice be made or is it possible to develop one all-embracing concept on effectiveness from several views?

A possible position with regard to this question is the one where productivity, in terms of quantity and quality of school output, is seen as the ultimate criterion. According to this view the other criteria are seen either as pre-conditions (adaptivity and responsiveness) or “means” (criteria referring to organisational conditions such as teacher satisfaction) (Scheerens and Bosker 1997). It should also be

Table 1.1 Organisational effectiveness models

Theoretical background	Effectiveness criterion	Level at which the effectiveness question is asked	Main areas of attention
(Business) economic rationality	Productivity	Organisation	Output and its determinants
Organic system theory	Adaptability	Organisation	Acquiring essential inputs
Human relations approach	Involvement	Individual members of the organisation	Motivation
Bureaucratic theory; social psychological homeostatic theories	Continuity	Organisation + individual	Formal structure
Political theory on how organisations work	Responsiveness to external stakeholders	Subgroups and individuals	Independence, power

noted that the perspectives that stress adaptability and responsiveness of the organisation to the environment do not take particular goals or desirable process characteristics for granted but pose the very question about what goals the organisation should strive for.

A final observation that should be made is that views on organisational effectiveness primarily encompass a prescriptive perspective: these are the things that are important (the effectiveness criteria) and that should be aimed for. At the same time, the basic organisation theories that are referred to also have a descriptive interpretation: this is how things *are*. In these more descriptive interpretations we find elements that emphasise a less idealistic, a more down-to-earth and probably a more realistic view of the functioning of organisations. For example, the political model does away with the assumption that all the members of the organisations will simply support the organisation's goals. Instead, each individual member of the organisation may pursue his or her own goals, which might coincide with the official goal but then again, might not. The more recent system dynamics developments that emphasise self-reference and self-organisation put question marks behind the realism in the view as if the school simply has to adapt to external constraints and policy changes. One could say that the organisational effectiveness perspective, in all its differing forms, emphasises a rationalistic, action-oriented view in which the malleability of organisational functioning comes first. The more descriptive interpretations point at systemic inertia, the importance of routine, and the consequences of internal interactions.

Quinn and Rohrbaugh (1983) have united the four most prominent organisation theoretical perspectives in one model, the so called competing values framework. This framework depends on two dimensions: the internal versus external orientation of the organisation, and the flexibility of the organisation versus a preoccupation with control (Fig. 1.4).

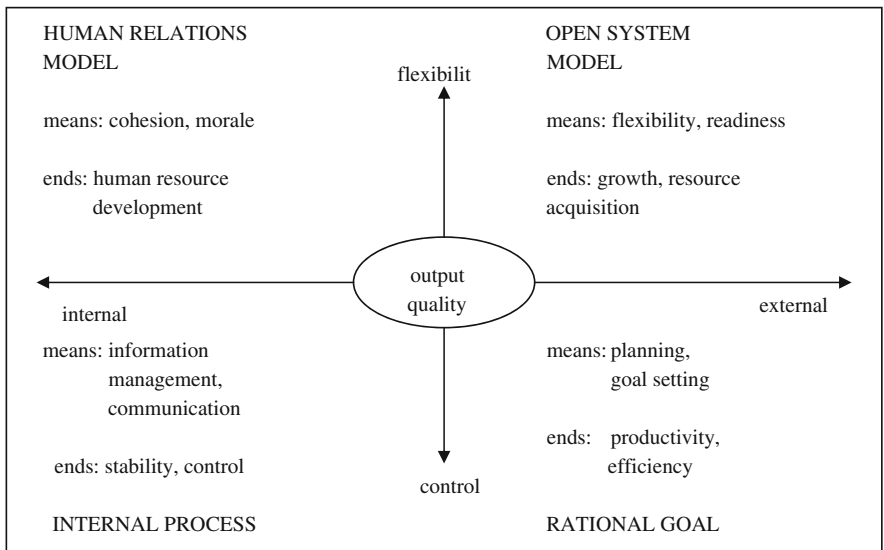


Fig. 1.4 Typology of effectiveness models. Source: Quinn and Rohrbaugh (1983)

From this framework, additional process indicators of school functioning may be generated (see the subsequent section on the monitoring of school quality).

1.2.3.4 What to Measure: Indicators of School Quality

In the above input, process, output and context models were discussed that summarise the results of empirical school effectiveness research (compare Fig. 1.3). The variables mentioned in this figure can be interpreted as input, process, context and output indicators defined at school level. Process indicators stand out as being particularly relevant to educational policy and practice because they are seen as malleable characteristics, associated with relatively high educational achievement. The rationale of selecting process indicators from educational effectiveness models is illustrated by a school and teacher survey for the World Education Indicator project (Scheerens 2002, 2003), as a joint project of UNESCO (UIS), OECD and the World Bank. The proposed set of key variables is listed below.

Module based on principal survey

(1) Indicators on effectiveness enhancing school conditions

Adequacy and effectiveness of resource management

School material resources

Human resources

School policies and practices associated with enhancing student achievement

Educational leadership

Curriculum alignment

Loss of official instruction time

School ambition

Staff-consensus and cooperation

Parental involvement

School autonomy

Professional development

School evaluation

School climate

School policies aimed at enhancing equal opportunities

Ability grouping and school remedial activities

(2) School background characteristics

Governance structure; funding

Community in which the school is located

School admission policy

Distance of the school from public resources and facilities

Background characteristics of the school's intake

Discrepancy language spoken at home, language used in the school

School organisational structure, ISCED levels covered, number of shifts, multi-graded teaching, school sites

Drop-out, grade repetition and "programme completion without delay" rates

Teacher module

(1) Effectiveness enhancing instructional conditions

Classroom resources

Opportunity to learn

Net instruction time in basic subjects

Classroom management and organisation

Supportive and challenging classroom climate

Student assessment at classroom level in mathematics/arithmetic

Active learning

Differentiation within classes

Teachers professional satisfaction

Teacher locus-of-control

(2) Teacher background characteristics and attitudes

(continued)

(continued)

Descriptive background characteristics

Gender

Age

Experience as a teacher

Level of education

In-service training

Perception of working conditions

General feeling about the adequacy of the school as a learning environment

Working time

Satisfaction with salary

Perception of teacher status

Class size

Single, double or triple shifts, multi-grade classes

<p><u>Human relations model</u></p> <p><i>Quality of work life indicators</i></p> <ul style="list-style-type: none"> - respect - participation in decision-making - professional interaction - performance feedback - opportunity to use skills - resources - congruence of personal/organisational goals 	<p><u>Open system model</u></p> <ul style="list-style-type: none"> - entrepreneurship - collegiality - capacity for self-evaluation and learning - overt school marketing activities - parental involvement - boundary-spanning positions - external change agents - student enrolment figures - resources (buildings, equipment)
<p><u>Internal process model</u></p> <ul style="list-style-type: none"> - planning documents - disciplinary rules - management information systems - formalisation of positions - continuity in sta ng and leadership - integrated curricula - attendance rates - lessons "not given" 	<p><u>Rational goal model</u></p> <p><i>(school effectiveness research)</i></p> <ul style="list-style-type: none"> - educational leadership <ul style="list-style-type: none"> - success-oriented ethos - monitoring of student's progress - time on task - content-covered (opportunity to learn) <p><i>(broader set of educational goals)</i></p> <ul style="list-style-type: none"> - non-gradedness - team teaching - individualisation, differentiation - continuous learning route - time spent on social, emotional, creative and moral development - "learning to learn" activities - diagnostic testing

Fig. 1.5 Additional factors for process indicators generated form the Quinn and Rohrbaugh framework

The broader framework on organisational effectiveness developed by Quinn and Rohrbaugh (see Fig. 1.4) can be used as a basis for the generation of additional indicators on the quality of schooling. The ideas for additional process indicators that come from this more comprehensive treatment of organisational effectiveness are summarised in Fig. 1.5. (Process indicators induced from the narrower model of school effectiveness research are also included.)

1.2.4 Actor Perspectives in Defining Educational Quality

1.2.4.1 Quality Seen from the Perspective of Parents

Studies that have looked at parents' motives in selecting a school for their children provide an indirect perspective on the way they perceive school quality. According to Dulmers (1988), motives for school choice depend on the school profile (educational concept and school denomination), pragmatism (closeness, safety) and issues concerning quality. Quality in the context of primary education depends on a child-friendly pedagogical climate and educational output.

Other authors (e.g., Pannecoucke 2005) use an input, process, output framework to define educational quality desiderata in parents' school choice. *Input* criteria refer to the school building, the quality of the teachers and other personnel and quality of the teaching and learning material. *Process* criteria include the scope of pedagogical offerings, the didactic approach and the pedagogical climate. *Output* criteria are student achievement indicators.

A criterion that Pannecoucke (2005) sees as having both an educational and a more pragmatic interpretation is school composition, in terms of student and teacher characteristics. In the context of Flemish schools, composition, in the sense of ethnic composition, appeared to be an important criterion for about 50% of the parents. For parents with an ethnic minority status, school composition was even more important, in the sense of a preference for a uni-cultural, as compared to a multi-cultural student population.

In the relevant literature, the authors recognise that parents' motives tend to vary with their social and educational background. Parents with lower qualifications emphasise more traditional quality aspects (order, small class size, achievement orientation), while parents with higher education levels would prefer autonomy, creativity and social emotional development) Dulmers (1988).

The fact that pragmatic considerations tend to overrule educational quality arguments in parents' school choice, may be interpreted in the sense that parents find it more difficult to judge school quality than pragmatic aspects like distance, school reputation and denominational orientation. Apparently, only relatively highly-educated parents tend to use relevant publications on school quality. This finding is underlined in a recent study by Janssens (2010), about the use of school quality report cards in the Netherlands. "Research into how parents and their children choose a school shows that the publication of school performance indicators has

little impact on that choice. This applies both to parents that are choosing a school for their children for the first time (entrance) and to parents that—for whatever reason—choose a different school (exit) (Hilhorst 2001; Karsten and Visscher 2001; van Bommel 2004; Meijer 2004, 2007; Janssens 2005; de Wolf and Janssens 2007; Meijer et al. 2007).” To the extent that the research literature on school choice motivation provides a unilateral picture, it would appear that profile and pedagogical climate play a somewhat stronger role than student achievement indicators.

1.2.4.2 School Quality as Defined in Current Quality Agendas of the Dutch Ministry of Education

In the Dutch situation, educational quality as perceived by the Ministry of Education can be inferred from recent policy documents that have appeared under the heading “Quality Agendas”. Quality Agendas have appeared for primary, secondary general and secondary vocational education, resp. Ministry of Education (2007a, b, 2008).

The Quality Agenda for *Primary Education* is strongly focused on the improvement of student achievement in (Dutch) language and arithmetic. Although Dutch students tend to do rather well on international comparative assessments, they are still expected to improve. Establishing performance standards in the domains of language and arithmetic is the first objective of the Quality Agenda. The percentage of students that perform below their potential, which is estimated at about 10%, should be reduced by 40%, while the percentage of schools that are judged as “weak” by the inspectorate should be reduced by 50%. Average achievement is expected to go up and the proportion of students scoring in the top segment of the distribution on international assessment tests should increase. Finally, by 2011 80% of the schools should have an appropriate and well functioning quality review system in place.

The following measures are proposed and financially supported:

- effective use of official school time
- stimulating an achievement-oriented school culture
- use of pupil monitoring systems
- application of evidence based programmes to improve education, particularly in schools with a disadvantaged student population
- creation of “rich” learning environments
- stimulation of parent participation
- dissemination of good teaching practices
- freedom and autonomy of schools in carrying through their improvement efforts
- professional development of teachers and school networking
- higher standards for knowledge of arithmetic in Teacher Training Colleges

The quality improvement programme is monitored and supervised by a Project Bureau Quality in Primary Education.

The quality agenda for *Secondary education* (general track) emphasises higher test scores on international tests in basic subjects like mathematics and language,

optimum achievement for all students, belonging to the top of the international Knowledge Society, creation of an attractive work environment for teachers and “and regaining trust in secondary education”. The latter is to be read as a reaction to a very critical report of a parliamentary investigative committee (Commissie Dijsselbloem) about the effects of systemic reform in secondary education.

The quality agenda for secondary education contains ten basic premises, six policy priorities and three types of conditions.

The ten basic premises present secondary education as an ambitious endeavour featuring: ambition, involvement, sustainability, focus, pleasure in learning and working, providing and using freedom of action, cooperation, “talents are central”, trust and appreciation.

The six policy priorities are:

- arithmetic and language, higher achievement on international tests as main goal and better use of tests as one of the means;
- excellence at all levels, better attainment indicators in the sense of reduced early school leaving and innovation and career guidance of students as some of the means;
- citizenship, as a school subject, to be stimulated by societal stages;
- professional space for teachers, emphasis on teacher ownership and a new focus on content and the primary teaching task of teachers;
- good and reliable examinations;
- an improvement-oriented culture, among other things stimulated by good school leadership, with concrete targets referring to a lowered proportion of weak schools (as established by the inspectorate) and more widespread use of sound internal quality care systems (75% of schools in 2012).

As conditions for realising these policy priorities, the Quality Agenda mentions the human scale of schools, the school as a professional organisation, appropriate use of official school time and a considerably larger budget. The existing high levels of autonomy in Dutch secondary education, as far as schools and teachers are concerned, are considered as optimal for realising the quality agenda (p. 9).

The *Strategic Agenda for Vocational Education and Adult Education*, for 2008–2011 seeks to improve vocational secondary education on the following five issues:

- (I) *Improving the connection between schooling and the labour market.*
- (II) *Improving the quality of education* (by means of renewed qualification dossiers, good mastery of language and arithmetic, 850 guided (taught) lesson hours per year, standardisation of examinations of the work-oriented subjects, possibilities to simplify the structure of vocational education).
- (III) *Better alignment of the profession-oriented column (lower, middle and higher vocational education).*
- (IV) *Active and sustained participation in education, work and society* (measures to suppress early school leaving and drop out).
- (V) *More consistency in vocation-oriented educational policy* (among others a re-orientation on the responsibilities and budgeting formulas of municipalities).

An important innovation in vocational education is the introduction of so-called competency-based education as part of the renewed qualification structure. This new structure is intended to receive legal status by 2011.

It is obvious from the Vocational and Adult Education quality agenda, as set out in the above, *impact* indicators concerning the relationship between schooling and labour market functioning are added as a quality aspect that is less emphasised with respect to general secondary education.

Improved quality in basic school outcomes (language and arithmetic/mathematics) is a common feature in the three Quality Agendas. Next, some new types of achievement outcomes are intended, citizenship skills and competencies in secondary education and work related competencies in vocational education. Attainment aspects, in the sense of decreased early school leaving, are also included in the quality agendas. The proper functioning of teaching processes and schools as organisations are “throughput” issues that are emphasised as well. These can be monitored on the basis of the work of the Educational Inspectorate, which rates schools as regular, weak or very weak. The quality agendas also mention certain general classes of levers for quality improvement, these are: testing, achievement monitoring, examinations and quality care measures, teacher training, continuous professional development, evidence-based innovation and better alignment among different school types and education levels. Basic features of the Dutch educational system, namely being the world champion in school autonomy and having a rather strongly diversified tracked structure of secondary schooling, are accepted uncritically as “optimal” (in the case of autonomy) or not mentioned at all (tracked system). A third feature that is left underdeveloped in the quality agendas is the extensive support structure (1 billion euros per year) to assist schools with innovations that are school controlled and bottom-up (Scheerens 2009).

1.2.4.3 School Quality as Defined in the Inspection Frameworks

Since 2007, the way the Dutch Educational Inspectorate monitors the quality of school education has been changed. The “New Inspection Supervision” starts out from a risk analysis, based on judgements of school output indicators, in order to identify weak and very weak schools. Only weak and very weak schools are in the following stage submitted to a close inspection, using a detailed set of quality aspects and indicators. Previously, all schools were visited and evaluated by means of this detailed set of indicators. Another characteristic in which the New Inspection differs from the preceding approach is that school governing boards are seen as the recipients of the information from the Inspection Supervision, whereas school management and school staff were previously the addressees.

For our purposes, the contents of the Inspection Framework, quality aspects and indicators that are now specifically used for the more in-depth inspection of weak schools are the most relevant. Since these are basically the same as they were

formulated in 2005, this framework is cited below. The source is Scheerens et al. (2005).

Schools in the Netherlands are quite autonomous. In comparison to other countries a very high amount of decisions about instruction, human resources management, financial management and curriculum are made by schools or their competent authorities (OECD 2003). School autonomy includes school self-evaluation and quality care. Within the given legal frameworks, schools independently determine quality targets and norms as well as the way in which these are to be measured and assessed. On the basis of their own judgement, the schools determine to what extent quality improvements are required, as well as the contents of such improvements. Supervision (Dutch: *toezicht*) by the Education Inspectorate is to function as an addition to the self-regulatory mechanisms by which schools are expected to carry out their self-evaluation and quality management.

The central question of school supervision is: “What is the quality of education in a particular school?” (Inspectorate 2002, p. 9) This core question is differentiated according to three sub questions:

- (1) What is the school’s quality care like?
- (2) What is the school’s quality in teaching and learning?
- (3) What is the quality of the learning results? (Inspectorate 2002, p. 9)

These questions refer to three domains of the supervision framework.

The three domains are divided into the following quality aspects, as indicated in the table below, based on the Inspection Framework for Primary Schools.

Quality domain	Quality aspects per domain
Quality care	1. Systematic quality care by the school 2. Testing
Teaching and learning	3. Subject matter coverage 4. Time 5. Stimulating and supportive teaching and learning process 6. Safe, supportive and stimulating school climate 7. Special care for children with learning difficulties
Outcomes	8. Learning results in basic subjects

For each of the quality aspects a number of indicators have been specified, for example:

- The school knows its own starting situation
- The school systematically evaluates the quality of learning outcomes and teaching and learning processes
- The school guarantees the quality of testing at the end of the primary school period
- Subject matter coverage is such that it prepares the pupils for secondary education

- Subject matter coverage is integrated
- Learning time is sufficient for the students to master the subject matter
- The school programmes sufficient teaching time
- The teaching activities are well structured and effective
- The teacher take care that their teaching is adaptive to the learning needs of the students
- School staff and pupils interact in a positive way
- The school stimulates the involvement of parents
- The school guarantees safety
- The school provides a pleasant and stimulating environment for the students
- The school provides a pleasant and stimulating working environment for its staff

In 2005, an updating and overhaul of the Frameworks took place. The complete list of indicators of the Framework for secondary schools is presented below.

Quality aspect 1: The school takes care of the assurance and improvement of the quality of education.

- 1.1 The school knows its entrance situation, including the specific needs of the student body.
- 1.2 The school systematically evaluates the quality of its performance in terms of learning results.
- 1.3 The school systematically evaluates the quality of learning, teaching and counselling.
- 1.4 The school has formulated measurable improvement targets.
- 1.5 The school carries out improvement activities in a systematic way.
- 1.6 The school guarantees the quality of learning and teaching.
- 1.7 The school guarantees the quality of the school examination and of other evaluation instruments.
- 1.8 The school reports on the realised quality of education to interested parties (parents, students, competent authorities, funding agencies and sponsors).

Quality aspect 2: The conditions for quality care are in place

- 2.1 School management initiates and steers the quality care.
- 2.2 Quality care is connected to the school's vision with respect to learning and teaching, as stated in the school plan.
- 2.3 The school management takes care of a professional school culture.
- 2.4 The school ensures effective communication about the quality of education.
- 2.5 Staff, school management, pupils, parents and competent authorities are all involved in the school's quality care.

Quality aspect 3: The subject matter offered is aimed at the broad development of the pupils and preparing them for further education and the labour market

- 3.1 The school has provided the foundations of subject matter offered in the lower grades.
- 3.2 The school guarantees that the actual subject matter offered covers the examination programme.

- 3.3 The programme (total of subject matter that is offered) is connected to important societal and actual themes.
- 3.4 Subject matter that is offered in one grade connects to the previous and subsequent grades.
- 3.5 There is coherence between the subject matter offered in the various subjects.
- 3.6 Subject matter is adapted to the educational needs of individual pupils.
- 3.7 The school offers knowledge about the different cultures that are present in the Netherlands on a regular basis, with reference to the corresponding norms and values.
- 3.8 Schools with over 20% of students that are weak in language, adapt Dutch language tuition to the needs of these students in all subjects.
- 3.9 The schools offers content on civic education, social cohesion and norms and values.

Quality aspect 4: The students receive sufficient time to master the subject matter

- 4.1 The intended teaching time corresponds to the legal norms.
- 4.2 The structural (i.e., planned) amount of lessons “not given” is minimal.
- 4.3 The incidental amount of lessons “not given” is limited.
- 4.4 Non-permitted absence of students is limited.
- 4.5 The teachers use the intended teaching time in an efficient way.
- 4.6 The school varies the amount of time for teaching and learning relative to the educational needs of the students.

Quality aspect 5: The pedagogical approach of the teachers induces a safe and stimulating learning environment

- 5.1 The teachers stimulate the pupils’ self confidence.
- 5.2 The teachers treat the pupils in a respectful way.
- 5.3 The teachers encourage pupils to treat one another with respect.
- 5.4 The teachers achieve a productive atmosphere.

Quality aspect 6: The didactic approach of the teachers supports pupils’ learning

- 6.1 The teachers provide insight into the goals, use and connectivity of the lesson activities.
- 6.2 The teachers provide clear explanations.
- 6.3 The teachers check whether the pupils have understood explanations and assignments.
- 6.4 The teachers create a meaningful context for the learning process.
- 6.5 The teachers stimulate the students to think (e.g., by posing challenging questions).
- 6.6 The teachers provide substantive feedback to the pupils.
- 6.7 The teachers provide insight into the pupils’ learning processes (simulating reflections on learning strategies).
- 6.8 The teachers make sure pupils are involved in the educational activities.

- 6.9 The didactic approach is functional with respect to the pupils' learning process.
- 6.10 The teachers adapt their didactic approach to the differences between the pupils.
- 6.11 The teachers use the analyses of pupils' achievements to shape their instruction.
- 6.12 The teacher's use of language is adapted to the language needs of the pupils.

Quality aspect 7: The students play an active and independent role during instructional activities

Students are confronted with stimulating activities and assignments.

The students reflect on their own learning processes.

The pupils are given responsibility for their own learning processes to a sufficient degree.

The pupils learn to work together in an effective way.

Quality aspect 8: The school has a safe and stimulating climate

- 8.1 The pupils manifest involvement in school life.
- 8.2 The staff manifests involvement in school life.
- 8.3 The parents feel involved in school life.
- 8.4 Staff and students interact in a respectful way in and outside classes.
- 8.5 Staff and students feel safe at school.
- 8.6 The pupils, staff and parents perceive the school leadership as supportive and stimulating with respect to the atmosphere at school.

Quality aspect 9: Guidance and counselling is aimed at a full development of the students' capacities

- 9.1 Guidance and counselling is aimed at proper development and the pupils' well-being.
- 9.2 The school uses a consistent system of instruments and procedures for monitoring the progress and development of the pupils.
- 9.3 The school uses information from primary schools in the guidance and counselling of the pupils.
- 9.4 The school supports pupils and parents with respect to career choices during the school programme.
- 9.5 The school supports the pupils and parents with respect to choices regarding further education and the labour market.
- 9.6 Special staff functions (like deans and mentors) see to it that pupils receive continuity in guidance throughout their career at school.

Quality aspect 10: Students with special needs receive the care that they require

- 10.1 The school has early diagnosis of pupils who need extra care.
- 10.2 The school analyses the kind of care that selected pupils require.
- 10.3 Special care is carried out in a systematic, planned way.
- 10.4 The school assesses the effects of special care.

10.5 Teachers and special staff for care co-operate well.

10.6 The school involves the parents of pupils requiring extra care in the special activities.

Quality aspect 11: The pupils attain the achievement results relative to their capacities

11.1 The pupils attain the achievement level that is to be expected given national averages.

11.2–11.5 The pupils stay close to the minimum amount of time to finish the programme for each of the programme variants in Dutch secondary education.

11.6 Pupils who take part in practical education develop according to an individual learning route.

11.7–11.10 The pupils obtain the marks that may be expected of them on the final examinations, relative to national averages for each of the programme variants of Dutch secondary education.

11.11 The pupils perform according to expectations in further education or the labour market.

11.12 Same as 11.12, specialised for students in practical education.

11.13 Student competencies are at a level that may be expected.

Indicators are applied by establishing their importance for the corresponding quality aspects and by being rated on a four-point scale (good, sufficient, insufficient and bad). These ratings are quantified and compared to pre-fixed norms, which ultimately leads to judgments of the quality in each quality aspect and domain. For more detailed information see Janssens (2005).

It is interesting to note that the inspection frameworks address input, process and output indicators. From the way the new inspection works, it is evident that outcome indicators play the key role. When it comes to more in-depth inspection, using the framework from 2005, process indicators, referring to the teaching process predominate. Scheerens et al. (2005) established that the choice of process indicators is well aligned to the knowledge base on educational effectiveness, implying that the process indicators in question have a certain predictive potential with respect to improving outcomes.

1.2.4.4 School Quality from the Perspective of the Certification Industry

The mission of “quality assurance” systems like ISO 9001 is to stimulate organisations to have quality management systems that ultimately meet the requirements of specified standards. Organisations have to prove that existing quality management occurs according to a set of standard procedures. These proofs are checked by external auditors, who in their turn have been authorised to certify organisations.

The core conceptual framework of quality management has two key elements:

- describing the organisation’s core processes;
- applying a certain methodology of quality assurance to each (or a subset) of these processes; the methodology is described as the PDCA methodology, which stands for “Plan–Do–Check–Act”.

The ISO 9001 model, for example, recognises a primary production process that is basically determined by customer requirements. Product realisation or “production” (be it of goods or services) involves transforming resources or inputs into products or outputs. Primary processes are examined for their effectiveness and the “added value” they provide to the customers. Quality management involves three support processes: (1) the management taking responsibility for quality assurance, (2) resource management and (3) measurement, analysis and improvement.

As a stylised description, the ISO 9001 model has a lot in common with the conceptual framework of school effectiveness, which likewise depends on an input–process–output model; and a distinction of a primary process at classroom level and supportive management and organisational conditions at the school level. The term “value-added” is also used with reference to school effectiveness, where it is interpreted as the “extra” gain in achievement that depends on going to a particular school as compared to another, irrespective of student background characteristics. The Plan–Do–Check–Act framework that is used in ISO and EFQM can readily be compared to the concepts of “retroactive planning”, which has a place in the theory of the learning organisation. The difference is gradual, in the sense that the standardised procedures of ISO 9001 require a more proactive approach, in the sense that organisations are meant to start with mission statements and strategic and operational planning (see Table 1.2).

A common part of both procedures is the emphasis on learning from experience and feedback. In the ISO model, feedback comes from the monitoring of the production process but also from measuring customer demand and consumer satisfaction.

Table 1.2 Schematic comparison of synoptic and retroactive planning

Characteristics	Synoptic planning	Retroactive planning
Initial activity	Formulate encompassing goals	Assess organisation’s functioning
Choice of means and methods	Deduce from scientific knowledge	Induce as improvement of weaknesses in current functioning
Scope	A broad scope encompassing all major aspects of the organisation	A partial “piecemeal” approach
Time-frame	Long term	Short term
Organisational structure	Bureaucracy	Learning organisation
Organisational participation	Top-down	Participative

Quality management systems are based on the premise that primary production functions are totally understood, so that a close monitoring of input and processes guarantees expected outcomes. This premise is not fulfilled for schools and teaching and learning processes. In economists' terms, the educational production function remains basically unknown, although we do have some understanding of what might work. When uncritically applied, these approaches could lead to a bureaucratic ritual of description of procedural aspects that are not or only loosely related to outcome attainment.

1.2.5 *Alternative Views on Quality*

UNESCO's Education for All Global Monitoring Report (UNESCO 2004) discusses notions of quality that are associated with "education traditions". On closer inspection these traditions are partly philosophical schools of thought (humanism, behaviourism, critical theory) and partly pragmatic and determined by specific contextual conditions or "types" of education (quality in the indigenous tradition and quality in adult education approaches).

The main characteristics of each of these five alternative approaches to quality in education are cited from the report (UNESCO 2004, pp. 32–35).

Quality in the *humanist tradition* is characterised as follows:

- Standardised, prescribed, externally defined or controlled curricula are rejected. They are seen as undermining the possibilities for learners to construct their own meanings and for educational programmes to remain responsive to individual learners' circumstances and needs.
- The role of assessment is to give learners information and feedback about the quality of their individual learning. It is integral to the learning process. Self-assessment and peer assessment are welcomed as ways of developing deeper awareness of learning.
- The teacher's role is more that of facilitator than instructor.
- Social constructivism, while accepting these tenets, emphasises learning as a process of social practice rather than the result of individual invention.

According to *behaviourist approaches*, quality in education can be objectively tested and stimulated by clearly structured external inputs:

- Standardised, externally defined and controlled curricula, based on prescribed objectives and defined independently of the learner are endorsed.
- Assessment is seen as an objective measurement of learned behaviour against preset assessment criteria.
- Tests and examinations are considered central features of learning and the main means of planning and delivering rewards and punishments.
- The teacher directs learning, as the expert who controls stimuli and responses.
- Incremental learning tasks that reinforce desired associations in the mind of the learner are favoured.

Quality in the *critical tradition* harbours a broad range of approaches, varying from Marxist ideology to the views of de-schoolers, like Illich and Freire. According to the EFA Global Monitoring Report ... “Critical theorists focus on inequality in access to and outcomes of education and on education’s role in legitimising and reproducing social structures through its transmission of a certain type of knowledge that serves certain social groups. Accordingly, these sociologists and critical pedagogues tend to equate good quality with:

- education that prompts social change;
- a curriculum and teaching methods that encourage critical analysis of social power relations and of ways in which formal knowledge is reproduced and transmitted;
- active participation by learners in the degree of their own learning experiences.”

As the EFA Global Monitoring Report is aimed at education in developing countries, a fourth perspective is critical in adopting Western concepts and focuses on self-reliance, equity and rural employment. This tradition is indicated as quality according to the *indigenous tradition* and has the following implications:

- Mainstream approaches imported from Europe are not necessarily relevant in very different economic circumstances.
- Assuring relevance implies local design of curriculum content, pedagogies and assessment.
- All learners have rich sources of prior knowledge, accumulated through a variety of experiences that educators should draw out and nourish.
- Learning should move beyond the boundaries of the classroom/school through non-formal and lifelong learning.

A fifth perspective on quality is related to *adult education approaches*. “In the adult education tradition, experiences and critical reflection in learning is an important aspect of quality. Radical theorists see learners as socially situated, with the potential to use their experience and learning as a basis for social action and social change” (UNESCO 2004, p. 34).

Key dimensions in the analysis of these alternative views on quality are: the kind of objectives, in the sense of desired outcomes of education that are propagated, considerations about desired process characteristics of teaching and learning and premises concerning learning theory. To start with the latter, reflections in the constructivist tradition have emphasised the importance of prior knowledge and the active roles that learners have. This could easily be connected to the use of real-life examples in teaching and to connecting to prior knowledge as much as possible and as such, be seen as a didactic principle that could be supported from all of the five approaches. These insights on learning should not necessarily lead to open and less pre-structured teaching strategies but in the humanist tradition, this implication is strongly present. In the critical, indigenous and adult education tradition connecting to the real-life situation of learners is more than just a didactic principle, rather an aim in itself. It remains to be seen whether the five traditions really emphasise radically different outcomes. Social skills would probably be emphasised from the humanist

perspective in particular, while critical values would be stressed from the critical, indigenous and adult education approaches. Only perhaps for a radical application of the indigenous approach would the matter of basic cognitive educational objectives be put up for discussion. With international assessment studies like TIMSS and PISA, globalisation has entered the world of education. Many developing countries have decided to take part in these assessment projects and this should probably be seen as a recognition of a willingness to be measured on the same standards as industrialised countries.

1.2.6 Integration

The perspective that quality should be judged on the basis of an evaluation of educational outcomes is predominant in the various approaches to educational quality discussed in this chapter. Nevertheless, differences exist in the emphasis that quality perspectives put on certain outputs (direct achievement outcomes, educational attainment or societal output) and the place that is given to judgments of educational inputs and processes. In many cases, these analytical facets of education (input, processes and output) are judged independently, on their own. At some point this was described as the disjointed view of educational quality. More complex operational definitions of quality include interrelationships between input, processes and outputs. This is the case for quality in the sense of effectiveness (which input and process combination yield the highest possible output?), efficiency (effectiveness at the lowest possible financial cost) and responsiveness (what kind of output and outcomes are required from the larger context?). Equity looks at inputs, processes and outputs with respect to variability across sub-groups of students. All basic facets of quality can be analysed in terms of achievement or attainment *levels* (productivity, effectiveness) and in terms of *variation* (equity).

In the diagram below four major types of orientation to educational quality are compared with respect to the meaning and emphasis they give to quality facets that are generated by the input–process–output–context framework.

Some additional comments with respect to this overview are the following:

Output, in the sense of student achievement, is particularly emphasised in primary and secondary general education, whereas attainment outcomes and impact on the labour market are more specifically addressed in vocational and adult education.

Some of the alternative perspectives on quality distinguish themselves by emphasising other than cognitive outputs.

Effectiveness, efficiency and responsiveness are analytically complex phenomena, which appear to be too complex for most actors, even certification agencies and school inspectorates. This underlines the earlier conclusion that quality judgements are usually based on looking at one quality facet at a time, mostly “gross” output indicators. “Net effects of schooling”, based on indicators of value added are equally difficult to understand for most actors.

Conceptual map of educational quality perspectives

Facets according to input/process/output/context	Sociological functions	School organisational views on quality	Actor orientations	Alternative views on educational quality
<i>Input</i>		Education production functions	Emphasised by parents and national government Inspectorate quality management	Behaviourist perspective
<i>Process</i>	Differentiation	Human resources, internal process, rational goal	Emphasised by inspectorate, quality management	All alternative views on quality
<i>Output (cognitive)</i>	Qualification Selection	Addressed as effect measures, value-added. Rational goal model	Of interest to all actors	Behaviourist
<i>Output (non-cognitive)</i>	Qualification	Less frequently addressed	Less frequently addressed. Parents	Humanist, critical theory
<i>Outcome</i>	Qualification/selection/allocation	Less frequently addressed	Of interest to all actors	Behaviourist, critical theory (equity orientation), VET approach
<i>Impact</i>	Allocation	Open system model	Particularly addressed by government, inspectorate, employers for vocational education	Behaviourist
<i>Effectiveness/efficiency</i>		Rational goal model School effectiveness	New orientation in policy analysis: evidence-based policy (government)	Behaviourist
<i>Responsiveness</i>	Qualification/allocation	Open Systems view	Important concern for employers; national government, school boards	Indigenous VET approach

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Chapter 2

Measuring Educational Quality by Means of Indicators

Abstract In this chapter the input-process-outcomes-context framework, introduced in Chapter 1 is used for categorising and describing input indicators, process indicators, outcome indicators and context indicators. The chapter starts out with a review and further illustration of this framework and follows up with a discussion of the various types of indicators that are generated from it. As such the chapter defines an exhaustive set of education indicators, categorized according to the input, context, process, output framework and recognizing the hierarchical nature of education systems (distinguishing a national system, school, classroom and individual student level). Specific attention is given to outcome indicators. Outcome indicators are further differentiated as output, outcome and impact indicators. Output indicators are seen as the more direct outcomes of schooling, often measured by means of standardized achievement tests. Outcome indicators, also described as “attainment indicators”, are summary statistics of participation and graduation rates. Impact indicators refer to the social status of students having reached certain levels of schooling.

Keywords Output, outcome and impact indicators • Context indicators • Process indicators • Input indicators • Achievement and attainment indicators

In this chapter the input–process–outcome–context framework, introduced in [Chap. 1](#), is used for categorising and describing input indicators, process indicators, outcome indicators and context indicators. The chapter consists in a revision and further illustration of the framework and a discussion of the various types of indicators that can be generated from it.

This chapter is based on an unpublished paper developed for the UNESCO in 2005.

2.1 A Brief Revision of the Framework

Perspectives on education quality can be clarified on the basis of a conceptual framework that describes education. The most frequently used method is to depict education as a productive system, in which inputs are transferred into outcomes. Steps in elaborating this basic scheme consist in:

- (a) including a context dimension that functions as a source of inputs and constraints but also as a generator of the required outputs that should be produced;
- (b) differentiating outcomes into direct outputs, longer-term outcomes and ultimate societal impact;
- (c) recognising the hierarchical nature of conditions and processes, which comes down to considering the functioning of public education as just another example of “multilevel governance”.

The model depicted in Fig. 2.1, also shown in Chap. 1, shows the basic ingredients of this framework.

In the schematic presentation of the framework in Fig. 2.1 there are various options for choosing at which level the central “black-box” is described. When analysing the impact of policy measures at the national level, one might choose the education system in a country as the central black box. In applications where the quality of schools is the centre of attention one would choose the school as the level where the transformation of inputs to outputs is studied. A perhaps more interesting option, however, is to distinguish several levels in the central black box, for example, the national educational system, the school level and the level of the group where the teaching and learning at school takes place, traditionally, the classroom level. But other options are possible: the students could explicitly be incorporated as a separate level and one might wish to include local community as a level as well. Finally, one or more controlling levels could be placed in the context.

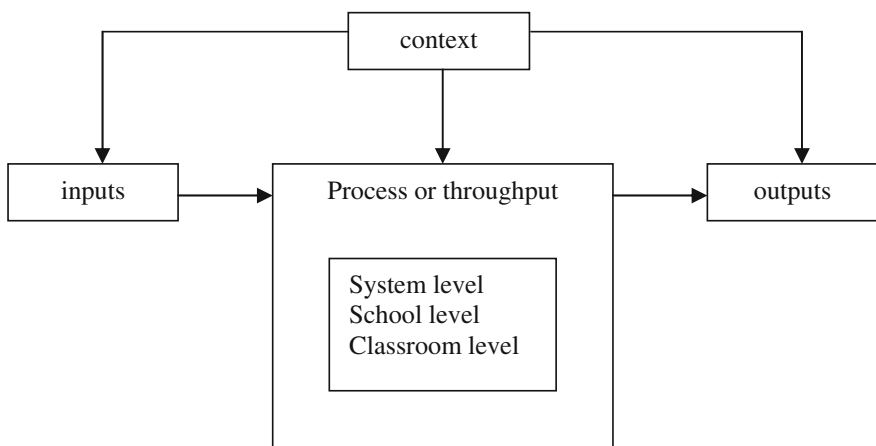


Fig. 2.1 A basic systems model on the functioning of education

It is worth underlining that the incorporation of a context dimension adds considerably to the flexibility and broadness of applicability of the framework. As already indicated, the context can be seen as a generator of inputs, as a level that determines or co-determines the definition of desired outcomes that should be generated and as a level that judges quality and provides feedback. In more practical terms, the context-dimension gives room for situational adaptation to local conditions.

A final analytical distinction to qualify the impact of “context” is the one between malleable conditions and “given” environmental constraints, sometimes also indicated as “antecedent” conditions. Malleable conditions are in the hands of actors on the scene, like national policy planners, local constituencies, school managers and teachers. Antecedent conditions already “exist”. Background characteristics of students, such as cognitive aptitude or socio-economic status of their home background, are examples of “given” factors. At higher levels, the school or system level, the distinction becomes more arbitrary. For example, school size could be seen as a given condition, but also, perhaps in a longer-term perspective, as a variable that is subject to change in national policies concerning the desired scale of educational provisions.

Another example is the composition of the student population of a school in terms of, for example, average socio-economic status. This variable is usually treated as a “given” condition, out of reach of policies aimed at improvement of the primary process of teaching and learning. However, a school might have explicit recruitment, selection and admission policies, in order to control student composition.

Having clarified the basic “working” of the input–process–output–context framework, it can be concluded that the framework is quite general and flexible for describing the functioning of education.

The rest of this chapter consists in a discussion of the following categories of indicators:

- outcome indicators, differentiated as output, outcome and impact indicators
- process indicators, differentiated at three aggregation levels, national system, school and classroom level teaching
- input indicators, differentiated between national system, school and teaching levels
- context indicators, differentiated between national system level indicators and the school community

2.2 Measuring Educational Outcomes

Outcome indicators are central in productivity and effectiveness interpretations of educational quality but also play an indispensable role in assessing the equity, efficiency and responsiveness of schooling. A distinction is made between output, outcome and impact indicators. Output indicators are seen as the more direct outcomes of schooling and are most likely measured by means of a form of student assessment, like a standardised achievement test. Attainment indicators, as for

- outcomes as measured by tests included in textbooks
- outcomes as measured by implemented school curricula (teacher developed)
- outcomes as measured by tests based on the intended national curriculum
- outcomes as measured by international tests covering the common core of a range of national curricula, e.g., TIMSS
- “literacy” tests, aimed at measuring basic skills in reading, mathematical and scientific reasoning, e.g., PISA
- competencies as multi-faceted dispositions of individuals, including cognitive, motivational and possibly other components
- personality traits, like internally or externally determined locus of control, independence, general intelligence

Fig. 2.2 A continuum of educational outcomes, running from highly content-bound to personality dependent

example the number of students that complete a certain period of schooling without delay, are of a more administrative nature. Impact indicators are indicators of the social status of students that have reached certain levels of educational attainment.

One of the dimensions on which output and outcome indicators can be differentiated is the degree to which outcome measures are tied to educational content or are relatively content free. Competencies can be placed on a continuum of types of educational outcome that run from specifically content-oriented to “content-free” personality traits. Discrete positions on this continuum are presented in Fig. 2.2.

In Table 2.1, an overview is given of the different categories of outcome indicators that could be used to monitor quality aspects related to the productivity, effectiveness and equity of education.

2.3 Process Indicators

Although indicators on educational processes can be used in a “stand-alone” way, according to what was described in Chap. 1 as a disjointed application of indicators, it makes more sense to see them as part of indicator *systems*, in combination with outcome, input and context indicators. In this section process indicators will be considered within the framework of macro-level, i.e., national level, indicator systems and secondly, as part of multi-level indicator systems, where transformation processes at school level are central.

2.3.1 System Level Indicator Systems

The OECD Education Indicators project (INES—see the Education at a Glance publications) uses the following categorisation, which is evident from the table of contents in the Education at a Glance Publications (OECD 1998).

Table 2.1 Overview of educational outcome indicators

Main categories of outcome indicators	Sub-categories	Technical issues
Output indicators	Achievement measures Subject matter based Literacy (reading, mathematical, scientific) Competencies (e.g., learning to learn)	Value-added effect measures; growth curves Assessment methodology (ranging from multiple choice tests to authentic assessment) Criterion versus norm-referenced testing
Outcome/attainment indicators	Attainment measures Graduation rates Proportion of students graduated without delay Drop-out rates Class repetition rates	Controlling for selection-oriented school policies
Impact indicators	Social participation rates (For each attainment level: % of employed at a certain job level) % of unemployed (For lower school levels: % enrolled in follow-up education) Degree of social participation (social capital) Adult literacy rates Average income, for each attainment level; earning differentials Skills shortages and surpluses	Availability of national educational and labour market statistics Appropriate measures of social capital and adult literacy

The main categories are:

- (A) The demographic, social and economic context of education (e.g., literacy skills of the adult population)
- (B) Financial and human resources invested in education (e.g., educational expenditure per student)
- (C) Access to education, participation and progression (e.g., overall participation in formal education)
- (D) The transition from school to work (e.g., youth unemployment and employment by level of educational attainment)
- (E) The learning environment and the organisation of schools (e.g., total intended instruction time for pupils in lower secondary education)
- (F) Student achievement and the social and labour-market outcomes of education (e.g., mathematics achievement of students in 4th and 8th grades and earnings and educational attainment)

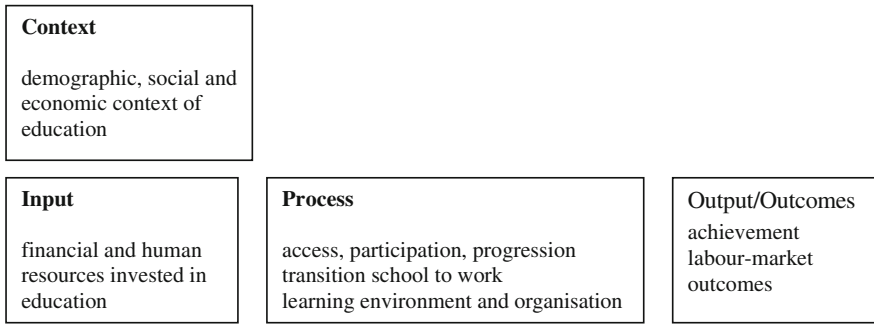


Fig. 2.3 Ordering of the OECD-INES education indicator set, according to a context–input, process and outcome scheme

These six categories can be classified in various ways. The context–input–process–outcome scheme, as used throughout this chapter, is the most likely way to do so. Accordingly, category A is in the context domain, category B refers to inputs, categories C, D and E refer to different interpretations of the process dimension and category F to an output/outcome dimension (see Fig. 2.3).

In Fig. 2.3, arrows between the boxes have been omitted since these categories are expected to be linked in a causal way only in a very loose sense. In fact, each category is used in a descriptive sense and interrelationships between indicators have hardly been analysed so far.

Examples of system level process indicators are given in Table 2.2.

Table 2.2 Examples of system level process indicators

Teaching time per subject
Total hours of instruction per year, for specific grade levels in primary and secondary education
Opportunity to learn, in terms of expert ratings of test curriculum overlap
The locus of decision-making in education, by education level
(This indicator shows at which administrative level decisions in sub-domains of education—curriculum, personnel management—instruction, resources—are made with a certain degree of autonomy)
School autonomy (this indicator is actually included in the concept of locus of decision making)
Education standards by level (e.g., targets like increased completion rates, percentage of students scoring at or above a particular achievement level)
Whether or not formal examinations are taken at the end of each school category
The degree of categorisation and formal streaming at secondary level
The evaluation capacity of the system (defined as a quantification of the occurrence and intensity of various evaluation forms, such as national assessment programmes, examinations, school inspection, an educational management information system, etc.)
The magnitude and diversification of an educational support structure in the country (possibly comprising a curriculum development unit, IT services, school counselling, an educational assessment and testing unit, etc.)
The division of private, government dependent and public schools
Incentive-based policies to stimulate school performance
The degree to which school choice is free

2.3.2 Comprehensive Indicator Systems Including Process Indicators of School Functioning

Educational systems have a hierarchical structure in which administrative levels are “nested”. Indicator systems may ignore this hierarchical structure by using statistics that are defined at national level or formal characteristics of the system. Examples are: pupil teacher ratio computed as the ratio of all pupils and all teachers in a country and teacher salaries defined on the basis of nationally determined salary scales.

Even when considering the use of indicators at national level only, there are two main advantages to using data at lower aggregation levels:

- disaggregated data allow the examination of variation between units, e.g., the variance between schools in success rates for examinations;
- disaggregated data allow for better adjustments and more valid causal inferences; the best example in education is the use of so-called “value-added” performance indicators based on achievement test scores adjusted for prior achievement and/or other relevant pupil background characteristics.

When it is the intention to relate, for example, school organizational characteristics to pupil achievement, disaggregate data at pupil level are required to carry out appropriate multi-level analyses.

Particularly when indicators are used for programme evaluation purposes, the above-mentioned advantages of disaggregated data are important because they provide firmer ground to answer causal questions about programme effectiveness.

A final added advantage is that the relevance of indicator systems for lower administrative levels (e.g., school districts and individual schools) grows when disaggregated data are available.

Overviews of process indicators at school and classroom level are provided in Tables 2.3 and 2.4.

2.4 Input Indicators

According to our basic input–process–outcome–context framework, *inputs* provide the material and immaterial pre-conditions for the core transformation processes in organisations. In the case of education and taking the school as the level where teaching and learning as the primary transformation process take place, the following main categories of input can be discerned:

- financial and material resources
- human resources
- background conditions of the students

Table 2.3 Overview of examples of process indicators of school functioning

 Process indicators defined at school level

Community involvement

The degree of actual involvement of parents in various school activities (the teaching and learning process, extra-curricular and supporting activities)

The percentage of the total annual school budget that is obtained from the local community

The amount of discretion local school boards have in the conditions of labour of teachers (possible operationalisations in EDUCO project—El Salvador)

School financial and human resources

Average years of teachers' experience per school

School level pupil teacher ratio

Average class size per school

Proportion of formally qualified teachers per school

School managerial "overhead" (principal and deputy-principal fte per 1000 students)

Achievement-oriented policy

Whether or not schools set achievement standards

The degree to which schools follow the (education) careers of pupils after they have left the school

Whether or not schools report achievement/attainment outcomes to local constituencies

Educational leadership

The amount of time principals spend on educational matters compared to administrative and other tasks

Whether or not principal's appraise the performance of teachers

The amount of time dedicated to instructional issues during staff meetings

Continuity and consensus among teachers

The number of changes in staff over a certain period

The presence or absence of school subject-related working groups or departments (secondary schools)

Frequency and duration of formal and informal staff meetings

Orderly and safe climate

Statistics on absenteeism and delinquency

Ratings of school discipline by principals, teachers and pupils

Efficient use of time

Total instruction time and time per subject matter area

Average loss of time per teaching hour (due to organisation, moving to different rooms, locations, disturbances)

Percentage of lessons "not given", on an annual basis

Opportunity to learn

Teacher or student ratings of whether each item of an achievement test was taught or not

Evaluation of pupils' progress

The frequency of use of curriculum-specific tests at each grade level

The frequency of use of standardised achievement tests

The actual use teachers make of test results

Ratings of teaching quality

Quality of instruction as rated by peers (other teachers)

Quality of instruction as rated by students

Table 2.4 Overview of effective teaching and learning variables

Effective teaching variables
Main teaching factors
Opportunity to learn
Structuring and scaffolding (cognitive structuring)
Stimulating engagement (motivational structuring)
Climate aspects
Task orientation
Mutual respect
Orderliness, safety
Monitoring and questioning
Feedback and reinforcement
Modelling learning and self-regulation strategies
“Authentic” applications
Adaptive teaching
Learning strategies of students
Overt
Engaged learning time
Student use of resources
Cooperative learning
Covert
Self-regulatory capacity
Auto-control
Meta-cognitive “actions”
Learning styles

2.4.1 Financial and Material Resources

Financial and material resources indicators can be defined at system and school levels. Financial indicators are predominant at system level, while material resources indicators make more sense formulated at the level of schools. In Table 2.5, examples of financial and material resources indicators, defined at system and at school level, are given.

2.4.2 Human Resources

A well-qualified and motivated teaching force is to be seen as one of the most vital assets for educational quality. Indicators on teachers as individuals or of the total stock of teachers in a country can be categorised in various ways.

In Table 2.6 a distinction is made between descriptive background characteristics of teachers, knowledge and skills, attitudes and morale relative to general working conditions and attitudes with respect to the work situation at school and student staff ratios.

Only part of these indicators is likely to be available on the basis of national statistics and would depend on the availability of school or teacher surveys.

Table 2.5 System level financial and material resources indicators

System level financial and material resources indicators
Proportion of Gross Domestic Product spent on education
Educational expenditure per student
Proportion of public and private investments in education
Public investment in educational research and development
Total expenditure on programmes and special facilities for disadvantaged students
State provision of ancillary services
Household expenditure and public subsidies to parents
Percentage of spending on salaries for administrative personnel
Percentage of spending on pensions for educational personnel
Percentage of spending on salaries for teachers
School level financial and material resources
Proportion of the school's budget that is acquired through other than public funding
School building facilities
Classroom equipment (furniture, computers, etc.)
School supplies like pencil and paper, chalk board, flipchart
Availability of textbooks on the major school subjects
Basic services like separate toilets for girls and boys, water, electricity, heating, telephone, provision of ancillary services, regarding nutrition, health and transportation

Table 2.6 Categorisation of teacher indicators

Teacher background characteristics
Age, sex, and ethnicity distribution
Full-time/part-time distribution
Certification/license status
Formal qualifications
Year of experience
Language
Health, specifically HIV
In-service training history
Teacher professional knowledge and skills
General knowledge
Content knowledge
Knowledge about pedagogical and didactic strategies
Knowledge about students
Beliefs and attitudes about teaching
Flexibility in adapting teaching repertoire
Teacher working conditions
Salaries (relative to other professionals)
Working time
Average class size
Merit-based incentives
Other incentive policies
Career structures
Teacher training/certification requirements

(continued)

Table 2.6 (continued)

Teacher autonomy
Standards-based teacher appraisal
Secondary working conditions (e.g., vacations)
Exposure to external inspection
Teacher morale and status
Opinions about career and job mobility
Teacher morale
Perception about being needed by society
Perceived status as a teacher
Appreciation of general working conditions
Appreciation of the work situation at school of current employment
Job mobility
Sense of political efficacy
Staff to student ratios
System level student teacher ratio
School level student teacher ratio
Support staff student ratio (system and school level)
School managerial “overhead” relative to the number of students

2.4.2.1 Student Background Characteristics

To some, perceiving students as the “raw material of the education production process” may seem to stretch the economic metaphor a bit too far. More psychologically inclined analysts might maintain that students are the main producers of learning and the attainment of learning results. For analytical purposes it nevertheless makes sense to recognise that the home background and intellectual capacities of students make a lot of difference. When effectiveness and productivity interpretations of quality are at stake, it is usually considered relevant to construct value-added outcome indicators, that is, indicators that show the effect of malleable conditions of schooling over and above the impact of background conditions. For equity interpretations of quality, student background characteristics function as categorisation criteria, to contrast groups with one another, for example, boys and girls, schools with a relatively small and a large proportion of students from minority groups, etc. Table 2.7 provides an overview of relevant student background characteristics.

2.5 Contextual Issues and Context Indicators

Within the input–process–outcome–context framework, specifying what is meant by the *context* depends on the level at which the central transformation process is defined. Throughout this chapter two interpretations have been used. Most of the time transformation processes at school level have been concentrated on. When

Table 2.7 Student background characteristics

General student background characteristics
General intelligence or scholastic aptitude
Socio-economic status
Mother’s level of educational attainment
Gender
Ethnicity
Student background characteristics associated with specific situational constraints
Discrepancy between language spoken at home and language at school
Distance a student has to walk to school
The amount of out of school time a student has to spent on labour
Whether the students has had a meal when arriving at school
Place to study at home
Number of books in the home
Malnutrition
Ill health/HIV

Table 2.8 Types of societal conditions particularly relevant to education

Contextual conditions of education systems
Demographic developments
The labour market, e.g., shortages and surpluses in certain sectors
The general state of the economy
Relevant cultural aspects
The institutional infrastructure
The general health situation in a country
Disasters of nature and wars

transformation processes at school are further differentiated to distinguish primary teaching processes at classroom level and secondary, supporting management and organisation processes at school level, a multi-level model results, in which everything “outside” the school is defined as the context. In this kind of conceptualisation “context” could be further subdivided in the direct environment, local community and local/regional administration on the one hand and the national context on the other. The second model interpretation is the one where education is considered at one level only, the national system level. According to this interpretation the context is defined as the relevant environment of the “education province” as a whole. As such, the general affluence of a country, demographic tendencies, cultural aspects that impinge on values that are important in education and the institutional infrastructure of a nation could be seen as the context of education. Overviews of different types of context indicators are given in Table 2.8.

Some of the societal dimensions mentioned in Table 2.8 have specific translations to conditions within the educational system. An overview of areas relevant for description and indicator development is given in Tables 2.9 and 2.10.

Table 2.9 Antecedent conditions within the educational system

Demographics
The supply and demand of teachers in a country
The proportion of teachers over 50 years old
The gender composition of the teacher force per school level
Percentage of students in school outside the age ranges for grade levels
Cultural aspects
The status of teachers as perceived by the general public
Appreciation of education and being educated
Expectations about pedagogical functions of the school (e.g., educating for good citizenship, moral education, teaching democracy)
Culturally embedded interpretations relative to authority and educational leadership
Institutional infrastructure
Degree of formalisation of teacher working conditions
Formalisation of teacher, student and parent rights (e.g., free school choice)
Formal monitoring and inspection of schools
Rules and enforcement of rules with respect to teacher absenteeism
Regulations with respect to private tuition by teachers in public service
Anti-corruption measures in education
Framework for delivering and assessing the curriculum

Table 2.10 The organisational infrastructure of the local community

The organisational infrastructure of the local community
The existence of a school board in which the local community is represented
The availability of a local or regional educational resources centre (which, among other things, might offer IT facilities to schools in the community)
The “openness” of local companies and industry to working with schools and offering students opportunities for site visits or specific training
The role of the community in financing the school; in-kind support

Cultural aspects that are manifest in the local community are likely to reflect regional, national or even “world cultural” traditions. It is therefore somewhat arbitrary to deal with these conditions at national or local levels. The reason for doing so here is that the local level is the one closest to the school and the aspects to be dealt with are seen primarily as contextual constraints on the functioning of schools. Fuller and Clarke (1994) have distinguished different types of cultural constraints relative to the effective functioning of schools (Table 2.11).

In our quality framework “context” has been interpreted as “provider of direct influence and control”, as a “provider of inputs” and as a source of more general “constraints” that interfere and interact with more direct control measures. In all of these interpretations the direction of influence is from the context to the

Table 2.11 Overview of local cultural conditions as examples of given local contextual conditions

Local cultural conditions
Parents' values concerning school participation of their children
Discrepancy between indigenous knowledge and "school knowledge"
Discrepancy between local perspectives on authority and ideas on active participation of students during lessons
Culturally constructed meaning of school inputs

Table 2.12 Areas of responsiveness to context at system and school level

Areas for describing responsiveness to context at system level
The availability of an institutional infrastructure for curriculum development
Enforcement mechanisms that monitor curriculum development and implementation
Liaison functions of educational authorities and societal organisations
Analysis and research units that try to predict the demands of the labour market
Dual systems in vocational education
Areas for describing responsiveness of the school towards the local community
External contacts of school management
"School marketing policies"
Active role of the school in acquiring parental involvement
"Authentic" teaching examples involving representatives from the local community

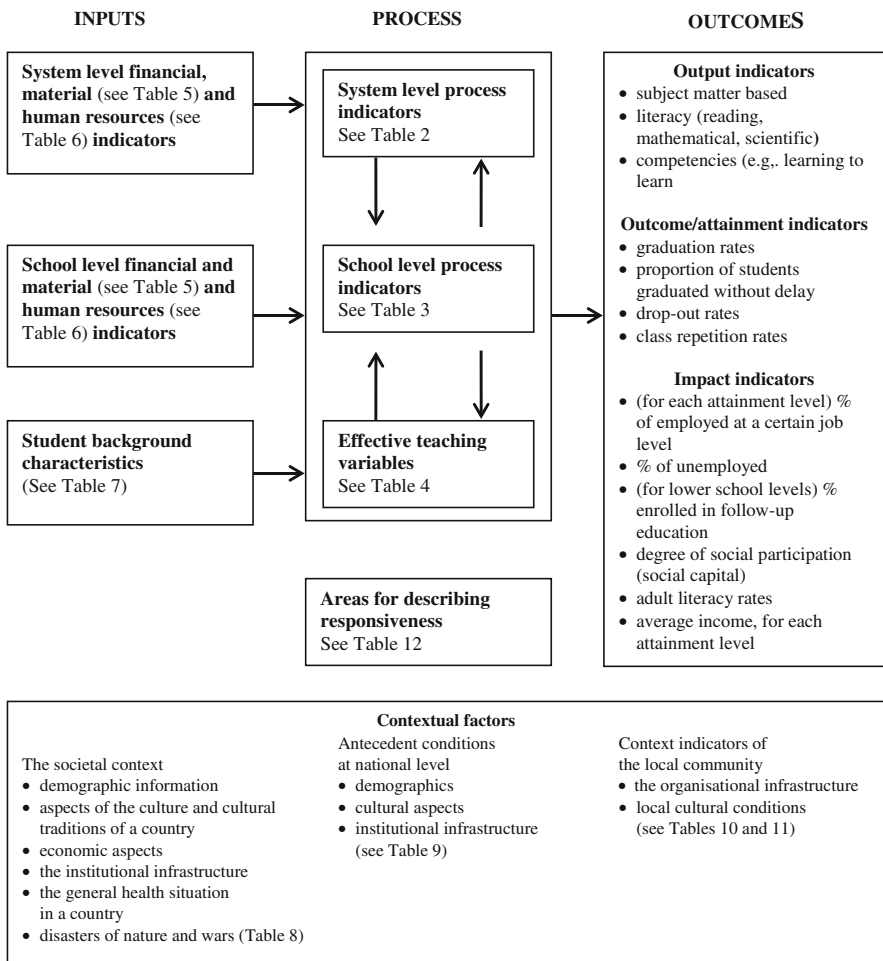
educational level, be it the school or the national educational system, that is being described or analysed for its quality. However, in one of the quality perspectives that was described in the chapter, the direction is the other way around. According to the adaptation or *responsiveness perspective*, schools or national educational systems attempt to meet the demands of the relevant context, the local community or society at large. This generally means two things, first, that the intended outcomes or the *goals* and *objectives* are in line with external expectations and second, that these goals are also actually being realised. The latter issue is the effectiveness issue, while the former more properly addresses the question of the responsiveness of educational organisations. The key question in the responsiveness interpretation of educational quality is therefore whether the "right" goals are chosen as a first step to delivering what is externally required. For our purposes, the main question is whether an educational system has an infrastructure and established mechanisms to deal with responsiveness issues. Not only with respect to the demands of the labour market, but also with respect to other kinds of societal demands on education, for example developing good citizenship.

Areas for describing "responsiveness to context" at system and school levels are summarised in Table 2.12.

2.6 Summary and Conclusion

In this chapter the well-known input–process–outcome–context framework was used to define different perspectives on educational quality: productivity, effectiveness, efficiency, equity, responsiveness and a more eclectic use of the quality indicators input, process, outcome and context education that were further described and specified in the remaining part of the chapter. The indicator set has been summarised in Table 2.13.

Table 2.13 Synthetic overview of educational input, process, outcome and context indicators



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Part II
Quality Review of Dutch Primary and
Secondary Education

Chapter 3

Description and Earlier Quality Review of the Dutch Educational System (Primary and Secondary Education)

Abstract The chapter starts out with a brief overview of the structure of the Dutch education system. As compared to other national educational systems the Dutch secondary school system is strongly differentiated, featuring several separate school categories and sub-categories. Next, attention is paid to other important characteristics of the Dutch education system: freedom of education, the role of public and private education, funding, and the role of the education support structure. Specific features of the Dutch educational system are that it is a strongly stratified system, it has a very large section of government dependent private schools (about 2/3 of all schools), schools are quite autonomous and there exists a fairly large education support structure. Early evaluation reports were rather critical about quality and equity aspects of the Dutch educational system, despite relatively high scores on international assessment tests like TIMSS and PISA. A persistent problem is the phenomenon that the various compartments of secondary education seem to function as barriers for attainment of students with a lower SES status.

Keywords International assessment studies • Public and Private schools • School autonomy • Freedom of education • Quality reviews of the Dutch education system

First, a brief overview is given of the structure of the Dutch education system as a whole. Next, attention is paid to other important characteristics of the Dutch education system; freedom of education; the role of public and private education; administrative structure; funding (including the contributions of parents and pupils), the education support structure and compulsory education. This information relates mainly to primary and secondary education. In the final section of this chapter, outcomes of earlier quality reviews will be summarised.

The first two sections of this chapter are an adaptation of Scheerens and Witziers (2004).

3.1 The Structure of the Dutch School System

The Dutch education system is divided into three levels: primary, secondary and tertiary education. These levels include the following types of education.

- Primary education
 - Primary education for children aged from 4 to 12 years;
 - special primary education for children (aged 3–12) who require special educational treatment; for older pupils in this category, there is also special secondary education.

Primary schools in the Netherlands cater for children from 4 to 12 years of age. They are usually arranged into 8 year groups.

Children in need of special care and attention can attend special schools.

- Secondary education
 - Secondary education caters for pupils between 12 and 18 years old.

Secondary education is divided into:

 - pre-vocational education (VMBO) and individualised pre-vocational education (IVBO), 12–16 years;
 - junior general secondary education (MAVO), 12–16 years (the MAVO was abolished in 1999 and integrated into pre-vocational education) (VMBO);
 - senior general secondary education (HAVO), 12–17 years;
 - pre-university education (VWO), 12–18 years.

Traditionally, the system of secondary education is very selective. Pupils move after primary education to one of the type of schools described above on the basis of their achievement levels within primary education. The brightest students attend HAVO and VWO, the rest goes to VMBO schools. From 1993 onwards, a shared curriculum during the first 3 years of secondary education students was the official policy (the so called “*Basisvorming*” or basic general education). The introduction of basic general education could be seen as an attempt to introduce some kind of comprehensive schooling. Despite this attempt, the reality in most schools is streaming in which the differentiation at the upper secondary level is already “foreshadowed”. In this respect the attempt to introduce comprehensive schooling utterly failed. The failure of the “*Basisvorming*” is documented in the report of the Parliamentary Inquiry Committee Educational Innovations, in 2008.

At upper secondary level the differentiation consists in HAVO, VWO and a vocational stream of upper secondary education.

Secondary vocational education (previously divided into senior secondary vocational education (MBO) and apprenticeship training), 16–20 years, is divided into four levels of training:

- (1) training to assistant level, 6 months to 1 year
- (2) basic vocational training, 2–3 years
- (3) professional training, 2–4 years
- (4) middle-management training, 3–4 years, or specialist training, 1–2 years

Level 2 (basic vocational training) is deemed to be equivalent to a basic qualification: the minimum qualification that anyone should have on entering the labour market. Holders of a basic qualification are capable of carrying out relatively complex routines and standard procedures, with responsibility for their work only. Level 1 (Assistant level) is for those who are not able to obtain a basic qualification, giving them the opportunity to obtain some sort of qualification nonetheless. Compared with workers with level 2 qualifications, assistants will carry out less complex procedures, usually requiring a less rapid response. Holders of level 3 qualifications (professionals) will have responsibilities over and above their own duties. They must be able to account for their actions to colleagues and monitor and supervise the implementation of standard procedures by others. They will also be capable of devising preparatory and supervisory procedures. The fourth level (middle management or specialist) requires non-job specific skills such as tactical and strategic thinking and involves responsibilities in keeping with such skills.

There are two learning pathways at each level:

- block or day release (equivalent to the old system of apprenticeship training, with practical training taking up at least 60% of the course);
 - vocational training (equivalent to the old senior secondary vocational education, with practical training taking up between 20 and 60% of the course).
- Adult education

The purpose of adult education, unlike vocational education, is not to train students for a particular occupation but to provide a solid foundation for vocational and secondary education courses and to enable adults to participate in society (social and life skills).

The following courses are offered at various levels:

- adult general secondary education (VAVO);
- courses providing a broad basic education;
- Dutch as a second language;
- courses aimed at fostering self-reliance.

Adult general secondary education gives adults (18 years and older) a second chance to obtain MAVO, HAVO or VWO qualifications in one or more subjects.

Courses providing a broad basic education may, for example, have a finishing level equivalent to completion of the first stage of secondary education. They are not intended as terminal education but to provide a basis for further education.

A key area of adult education is the teaching of Dutch as a second language. Courses of this kind are designed to bring the language skills of non-native speakers up to an acceptable level. Newcomers to the Netherlands are obliged by

law to attend a social integration programme at a Regional Training Centre, during which they receive not only Dutch language lessons, but also training to help them to cope with the Dutch way of life.

Finally, there are courses of a general introductory nature that aim to give students the minimum language, numeracy and social skills necessary to get by.

- Tertiary education

Higher education is divided into:

- higher professional education (HBO);
- university education (WO);
- open higher distance education (Open University).

Given the scope of this report, no further information will be given on tertiary education.

A scheme of the Dutch education system, excluding adult education, is presented in Fig. 3.1.

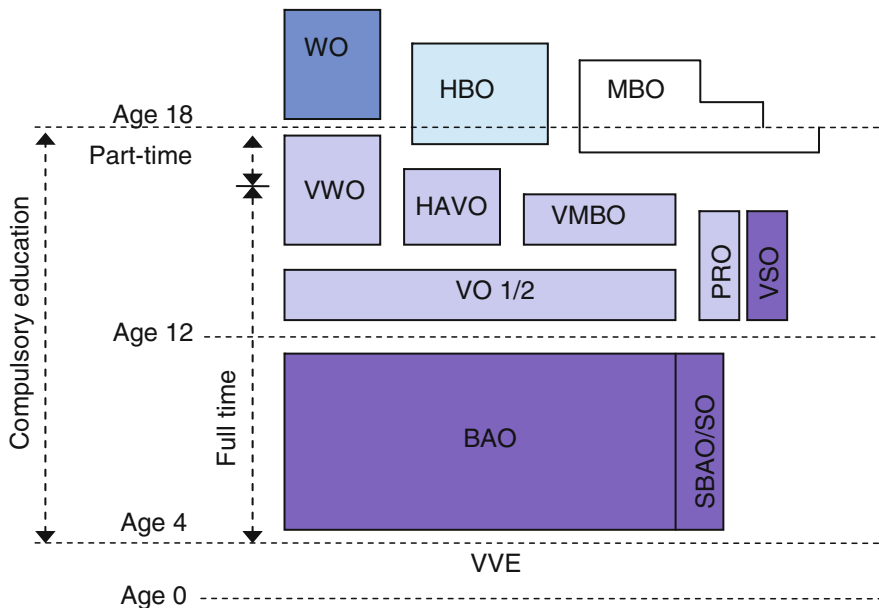


Fig. 3.1 The Dutch school system. *BAO* mainstream primary education, *HAVO* general secondary education, *HBO* higher professional education, *MBO* vocational education, *PRO* practical training, *SO* special education, *VMBO* pre-vocational secondary education, *VVE* early childhood education, *VWO* pre-university education, *WO* university education

3.2 Some Specific Features of the Dutch Educational System

3.2.1 Freedom of Education

One of the key features of the Dutch education system, guaranteed under article 23 of the Constitution, is freedom of education, i.e., the freedom to found schools, to organise the teaching in schools and to determine the principles on which they are based (freedom of conviction).

The freedom to found schools implies that people living in the Netherlands have the right to found schools on the basis of their own religious, ideological or educational beliefs and to have them funded by government. The result of this constitutional right is that schools in the Netherlands differ from each other in terms of their denomination or ideological outlook.

The freedom to organise teaching means that schools are free to determine what is taught and how. The Ministry of Education, Culture and Science does, however, impose a number of statutory standards in relation to the quality of education. These prescribe the subjects to be studied, the attainment targets and the content of national examinations. There are also rules about the number of teaching periods per year, teacher training and teaching qualifications, the rights of parents and pupils to have a say in school matters and the planning and reporting obligations of schools. As a rule, schools enjoy considerable freedom in the choice of textbooks and materials and in the way they manage their affairs. The Education Inspectorate is charged by the Minister of Education with supervising the manner in which schools fulfil their responsibilities.

Article 23 of the Constitution is extremely important in the Dutch policy context. Attempts from the central government to interfere with the content, processes and outcomes of education have always been criticised and/or impeded on the basis of this article.

3.2.2 Public and Private Schools

Parents and children in the Netherlands can choose from a range of both publicly run and privately run schools. However, practically all private schools are government-dependent with regard to their funding. This fact is the outcome of a school struggle between the Protestant and Catholic sectors in society against the non-religious sectors. The struggle ended in 1917 with a victory on the part of the religious political parties. From then on, Protestant, Catholic and other religiously-based schools were financed by the state in the same manner as the “secular” public schools (Boekholt and Booy 1987).

Publicly run schools are run by the municipal authorities or by a governing committee appointed by the municipality for this purpose. They are open to all children regardless of religion or outlook. Some publicly run schools are based on

specific educational principles. Montessori schools are one example. About one-third of all schoolchildren in the Netherlands attend publicly run schools, while the other two-thirds attend privately run schools. These are run by an association or a foundation. Most of them are either Roman Catholic or Protestant but there are also Jewish, Islamic, Hindu and humanist schools in the Netherlands. In addition, there are private non-denominational schools run by an association or foundation but not based on any specific religious or ideological beliefs. Like some of the publicly run schools, many privately run schools base their teaching on specific educational principles, like those of Maria Montessori. Unlike publicly run schools, which must admit all pupils, private schools can impose criteria for admission. In practice, however, most private schools pursue non-restrictive admissions policies.

3.2.3 Administrative Structure

There are at least four important administrative levels in the Dutch education system, each with their own responsibilities and tasks. The Ministry of Education, Culture and Science constitutes the top level. This Ministry is headed by the Minister of Education, Culture and Science. There are currently two State Secretaries (junior ministers), each with specific areas of responsibility within the general policy guidelines laid down by the minister. The chief civil servants together form the Executive Board, which bears overall policy responsibility. The ministry comprises a number of administrative departments plus the Central Funding of Institutions Agency and the Education Inspectorate, which, by the way, has a loose association with the ministry. There are three types of department: field departments, cross-sectoral departments and support departments. Specific educational policies and science policy are developed and evaluated by the six field departments. Each of these is responsible for a particular field of education and maintains contact with the institutions in that field. The cross-sectoral departments have the task of developing policy in a specific area of expertise touching upon virtually all the field departments. The support departments are responsible for developing policy for the Executive Board and/or provide a specialist service of some kind for all the units within the ministry.

There is one central advisory body at national level—the Education Council (*Onderwijsraad*)—which advises the government on the broad outlines of policy and legislation. Next, specific councils for all of the educational sectors have been created; the PO Council, the VO Council, the MBO Council, the HBO Council and the Society of Collaborating Universities (VSNU). These councils represent the “competent authorities” in education and also carry agendas on good governance and innovation in their respective sectors. All new legislation must be seen by the Council of State, the highest advisory body, before it is presented to parliament.

Central government, in the person of the Minister of Education, Culture and Science, controls education by means of regulations and legislation, taking due account of the provisions of the Constitution. Its prime responsibilities with regard

to education relate to the structuring and funding of the system, the management of public-authority institutions, inspection, examinations and student support. Central government also promotes innovation in education.

Control may be exercised by imposing qualitative or quantitative standards relating to the educational process in schools and/or attainment results, by means of arrangements for the allocation of financial and other resources and by imposing conditions to be met by schools. Matters on which central government decides include:

- the types of school that may exist;
- the length of courses in each type of school;

for some types of school:

- the subjects that must or may be taught in each type of school;
- the minimum and maximum number of teaching periods to be devoted to each subject in each type of school;
- the minimum and maximum number of teaching periods per week;
- the length of teaching periods;
- the norms for splitting up classes;
- standards of competence for teaching staff;
- the maximum number of teaching periods per staff member;
- the salaries and main elements of the legal status of teaching staff;
- arrangements for admitting pupils to special schools and secondary schools;
- arrangements for examining pupils;
- opportunities for participation by staff, pupils and parents;
- norms for the establishment and closure of schools;
- the amounts which may be spent on school buildings and educational facilities.

At the intermediate level one finds the provincial authorities. The involvement of the provincial authorities mainly takes the form of statutory supervisory and judicial duties. The Provincial Councils ensure the availability of adequate numbers of publicly run primary and secondary schools and act as appeals bodies with regard to decisions taken by the municipal authorities. With regard to the management of schools and the curriculum, the role of the provinces is limited, partly because they cannot be the competent authority of an educational institution. The powers and responsibilities of the provinces relate to primary, special and secondary schools and the alignment of education and employment. Concerning primary schools, the provinces approve municipal plans for the establishment of new public and private schools. In the context of their duty to ensure adequate provision of public schools, they approve municipal decisions with regard to the closure or preservation of small public-authority schools. Finally, they settle disputes between local government and private school boards on non-staff-related matters.

In the area of secondary schools, they advise the minister with regard to applications to have new schools and/or departments included in the national schools plan. Moreover, they ensure the availability of adequate numbers of publicly run establishments (for each type of school) and they advise on the

amalgamation, division, transfer, etc., of schools and departments with an eye to achieving an even spread of public-authority education.

The municipal authorities have a dual role: they are both the local authority for all schools in the area (whether publicly or privately run) and at the same time the competent authority (school board) for the publicly run schools. The municipalities' powers and responsibilities in their role as local authority are as follows with respect to primary schools: the municipalities draw up annual plans for necessary changes to accommodation for both publicly and privately run schools; they maintain the school advisory services; they are responsible for allocating resources from the budget for eliminating educational disadvantages and drawing up a local compensatory plan; they adopt annual plans for public and private schools; they fund accommodation, other facilities and running costs.

Municipalities also have many responsibilities regarding secondary education. They have a statutory responsibility for the coordination of school accommodation to ensure the optimum use of school buildings; they are responsible for allocating resources from the budget for eliminating educational disadvantages and drawing up a local compensatory plan; otherwise they act in this area almost exclusively as competent authorities.

In the field of adult and vocational education, they make funds available to educational establishments on a contract basis and buy in adult education for certain target groups; they implement the legislation on school transport, imposing their own criteria and conditions within the framework of the legislation, while they also implement the Compulsory Education Act, ensuring compliance with the Act in both public and private schools.

All schools have a legally recognised competent authority, also referred to as the school board. The competent authority administers and manages the school or schools for which it is responsible. Administration entails looking after the material aspects of the organisation of a school and, in particular, meeting the running costs and personnel costs. Management involves determining policy on the curriculum, personnel matters (appointment and dismissal of staff) and the admission of pupils. The competent authority is responsible for what goes on in the school insofar as this is governed by statutory regulations. Some of its powers may be delegated to the school head, but responsibility continues to lie with the competent authority.

In the case of public primary, secondary and special schools, the municipal executive may act as the competent authority. Alternatively, the municipal council may opt to delegate the tasks performed by the municipal authorities as the competent authority of publicly run schools to some other type of body governed by public law. With the entry into force of the Public-authority Schools (Management) Act, municipal authorities were given more scope to choose the form the competent authority (school board) may take.

The competent authority of private schools is an administrative body governed by private law. There are three types of school board or competent authority: associations, foundations and church bodies, a foundation being the most common. As a condition of funding from the public purse, the law lays down that private

educational establishments must be maintained by a legal person with full legal competence, whose aim is to provide education without any profit-making motive.

Some schools actually consist of two or more schools with different outlooks, which cooperate closely together and share the same competent authority. Some public and private schools cooperate in this way; where this is the case they have the option of choosing to have a competent authority governed by either private or public law. Cooperation between public and private schools is governed by statutory regulations, the purpose of which is to safeguard the provision and nature of public education within mixed schools of this kind.

With regard to the powers and responsibilities of competent authorities, the law states that anyone is free to provide education. This encompasses the freedom of establishment, the freedom of conviction and the freedom of organisation of teaching. The freedom of establishment implies the freedom to found a school based on principles or beliefs of any kind. The freedom of conviction means that the competent authority is free to determine the principles or beliefs on which the school is based. The freedom of organisation of teaching refers to the freedom of the competent authority to determine the content of teaching and the teaching methods used. Apart from this, the competent authority has a number of more specific powers and responsibilities.

The governing body of a publicly run school has the same powers and responsibilities as that of a private school. These include: setting up a school; choosing the teaching materials; including optional subjects in the timetable; fixing the timetable (assigning teaching periods to different subjects or areas of the curriculum); appointing and dismissing heads, teachers and non-teaching staff; determining personnel policy and aspects of the conditions of service of staff attached to the school; deciding on the admission and exclusion of pupils; formulating rules of conduct for the pupils; determining the internal organisational structure of the school, including arrangements for participation by pupils, parents and staff; determining the nature of out-of-school activities; deciding whether the school will participate in educational innovation projects; deciding what use the school will make of the services of educational support organisations; determining the form and nature of relations between the school and outside organisations; deciding whether and how third parties may make use of the school building; managing the school's financial resources and taking care of the administration; deciding whether to close a school or a department within it.

The governing body of publicly run schools also has a small number of additional responsibilities linked to the specific function of public-authority education: there is no formal freedom to found and maintain public schools but rather a duty to provide an adequate number of schools; no child may be refused admission to a school; the governing body can be publicly called to account by the municipal council for its actions. It must be noted that many of the tasks and duties of school boards are carried out by school heads.

Vocational and higher education institutions are headed by management boards or executive boards and enjoy a large measure of autonomy.

Table 3.1 Percentage of decisions taken by individual schools in public lower secondary education

	Organisation of instruction (%)	Personnel management (%)	Planning and structures (%)	Resources (%)
Netherlands, 1998	100	79	64	50
Netherlands, 2008	100	100		

Source OECD (1998, 2008)

3.2.4 Decentralisation and School Autonomy

Comparing the information given in the previous paragraph with what is known from international research, it becomes clear that Dutch schools have considerable decision-making authority. In the Netherlands 73% of all decisions, concerning lower secondary education, were taken by individual schools, OECD 1998. When taking different domains of decision-making into account, Table 3.1 reveals that the autonomy of Dutch schools is relatively strong in all four domains distinguished by the OECD. More recent OECD (2008) data, from Education at a Glance, show that in the domains “organisation of instruction” and “personnel management”, school autonomy in the Netherlands had increased and is now at 100% of decisions taken by the school for both domains (see Table 3.1).

3.2.5 Support Structure

The general support services include the school advisory services (SBDs), which work with primary and special schools and the three national educational advisory centres (LPCs): the Educational Advisory Centre (APS) for non-denominational schools, the Protestant Educational Advisory Centre (CPS) and the Catholic Educational Advisory Centre (KPC). These national centres provide services primarily for secondary schools, primary teacher training colleges and the school advisory services.

The specialised support organisations are: the National Institute for Educational Measurement (CITO), the National Institute for Curriculum Development (SLO), the Centre for Innovation in Training (CINOP) and the Agricultural Education Support Centre (BOA). The municipal authorities are responsible for the maintenance and quality of the school advisory services. They receive funds earmarked for this purpose from central government. The schools themselves have a say in the actual activities undertaken by the school advisory services but municipalities can reserve a proportion of the available resources for local priorities.

Almost all support organisations are (partly) funded by the government or municipalities. However, policy measures have been taken to make these organisations more market oriented. This implies that they are allowed and stimulated to

find their own additional funds by offering particular services. For example, one of the commercial activities offered by (a branch of) the National Institute of Curriculum Development (SLO) is to support schools with the selection of text books.

During the last decade the support structure has been further developed to include the earlier mentioned councils such as the PO and VO Council. These councils combine a governance role with a support function. More specialised organisations have also come into being, such as the Forum Beta Technique and “Knowledge Net” (to further the choice of exact subject and R&D in the area of information technology, respectively). Together with a whole range of special funding arrangements, the total budget for educational support amounted to almost 1 billion euros in 2010 (Scheerens 2009).

3.2.6 Compulsory Education

It is compulsory for children in the Netherlands to attend school full-time from the age of five. In practice, however, nearly all children start school at four. Full-time education is compulsory until the end of the school year in which the pupil reaches the age of 16. Young people are then required to attend an educational institution part-time until they are 18. A large proportion of youngsters in this age group are in full-time secondary or secondary vocational education. Others opt for day release, spending one day a week in the classroom and the rest of the week receiving practical training with an employer. The Compulsory Education Act is implemented by the municipal authorities. The municipal executive checks that children below school-leaving age who are registered as resident in the area are enrolled as pupils at an educational establishment. The local authorities ensure compliance with the Act in both public and private schools through the school attendance officer appointed for this purpose.

3.2.7 Funding

As stated in the above (almost) all schools are funded by the state. Article 23 of the Constitution puts public and private schools on an equal financial footing. This does not mean that there is no room for the private sector. Primary and secondary schools may obtain sponsoring in the form of cash, goods or services in return for which something is provided by the pupils or parents in the context of school activities. Examples include sponsored teaching materials, advertisements in the school paper, the distribution of products, sponsoring of school trips and other activities and sponsoring of the building, furnishings and fittings or equipment. In early 1997 a covenant was signed by the State Secretary for Education, which stipulates that sponsoring must not affect the content of teaching or put schools in a vulnerable position and that teaching materials must not contain advertising.

The amount of money involved is limited. Less than 3% of the budget is provided by public investments (OECD 1998).

3.2.8 Contributions of Parents and Students

Education is free of charge up to the age of 16. Some schools ask for a parental contribution but such contributions are voluntary and may not constitute an obstacle to the admission of pupils. Under the Primary Education Act (WPO) the competent authority of a school is obliged to provide facilities for pupils who wish to stay at school during the lunch break. The costs involved are borne by the parents of those children who make use of this facility. Around 30% of pupils stay at school during the lunch break.

Secondary school pupils have to pay for their books and learning materials, travel costs, other study costs and—where applicable—the cost of living away from home.

Pupils of 16 and over who attend a government-funded secondary or special school full time or are following a vocational training pathway as defined in the Adult and Vocational Education Act (WEB) or are taking an adult general secondary education (VAVO) course, comprising at least 850 hours of teaching and placements per year spread over a minimum of 40 weeks, have to pay annual tuition fees, the level of which is set each year.

Day or block release students (within the meaning of the Adult and Vocational Education Act) and those following a vocational training pathway or VAVO course which does not meet the criteria for a full-time course laid down in the Study Costs Allowances Act, i.e., part-time students, pay course fees. The amount is much less than that paid by full-time students.

Parents of secondary school pupils may, depending on their income, apply for help in meeting the study costs of their children. If eligible, they receive a sum covering the school fees and an allowance towards the other costs of study.

In exceptional circumstances, such as where there is no school available within a reasonable distance from home, parents may be entitled to assistance with the costs of travel to and from school.

3.3 Earlier Quality Reviews of the Functioning of Dutch Primary and Secondary Education

In this section, four quality reviews that have occurred during the last two decades will be referred to, giving a cursory overview of the general tendency of the review and the main strengths and weaknesses mentioned. The first review was conducted in 1989 by a panel of national experts, as a basis for an OECD review of the Dutch Educational system. Its final report had the creative title: *Richness of the*

Incomplete (Ministry of Education 1989). The second review was conducted by Scheerens and Witziers, as part of a follow-up study of OECD's PISA 2000 study and published in the volume "*Conditions of School Performance in Seven Countries*", edited by Doebert, Klieme and Sroka, 2004. The third quality review is the report of the *Parliamentary Inquiry Committee about Educational Innovation*, better known as the "Dijsselbloem Committee", which appeared in 2009. The final quality review is in fact based on the monitoring of Education by the Ministry of Education, as presented in the annual Publication "Focalisation on Trends" (Ministry of Education, 2010).

3.3.1 "Richness of the Incomplete" (1989)

As the title expresses, the report paints a picture of Dutch Education as an interesting and well-equipped educational system, particularly as far as support and R&D is concerned. At the time, few results of International Comparative studies were available and in those few, the Netherlands did fairly well, with the exception of the IEA literacy study in primary education. Early school leaving without a degree was seen as a growing concern. Much space was devoted to decentralised and centralised elements in the functioning of the Dutch educational system, calling for more freedom from detailed administrative regulations from the top and the desirability of clear attainment targets for all, at the same time. Among the areas of concern, inequality is the most serious problem, both in terms of the selectivity of the tracked system of secondary schools and in terms of the lagging behind of low SES students and students with a minority background. "The different types of secondary education are still too separate from one another despite the restructuring of secondary education which took place in 1968" (page 224). Another concern that is noted is the declining status of the teaching profession and the need for well-qualified teachers.

3.3.2 *The Position of the Netherlands in the 7 Country Study* (Doebert et al. 2004)

This study was a German initiative. The main purpose was to better understand the disappointing PISA 2000 results of Germany by making a comparison with more successful countries, such as Finland, Canada and the Netherlands. In the Dutch case study report for this project, Scheerens and Witziers (2004) note that the relatively high results of the Netherlands on the (then available) international studies are coupled with relatively low costs per student. They say: "The statement that Dutch education is sober but efficient does not mean that the Dutch Education System is without problems. Considered from an international viewpoint, these

problems relate mainly to the number of students leaving the system with low qualifications or no qualifications at all. Moreover, the system is plagued by persisting inequalities between students from different socio-economic backgrounds, although the performance gap is not as wide as in other countries with a tracked system of secondary schools. The achievement levels of ethnic minority students are another major problem. With regard to teachers, the data show that compared to Dutch standards of employment status, the status of teachers is relatively low.” (page 426). This low status occurs while salaries, from an international perspective, are above average, although it must be noted that teachers make long hours and teach relatively large classes.

The case study report goes on to note that during the 1990s, two ambitious reforms were started in secondary education; the start of basic secondary education in lower secondary education and the so-called *Studiehuis* (which literally means Study House) innovation in upper secondary education. The latter innovation was aimed at promoting an active and independent attitude towards learning, sometimes indicated as “new learning”. The authors asked themselves why the Netherlands, despite the ambitious reform agenda, the persisting problems of inequity and the relatively modest investments in education, did so well in the PISA 2000 study. Although “hard” evidence on these issues is lacking, they tentatively offer the following explanations:

- closeness of the educational objectives and subject matter-related didactics to the contents of the international tests in studies like TIMSS and PISA;
- the relatively high teaching time in the subject matter areas that are tested in the international assessment studies;
- the high standards of the curricula in the main subject matter areas of secondary education, as the goals and content for each subject are determined by professional organisations of teachers and subject matter experts who are rather ambitious;
- the fact that there are central examinations and an increasing impact of other evaluation and monitoring approaches, like school self-evaluations, school inspection and periodic assessment of student performance.

3.3.3 The Report of the “Dijsselbloem Committee” (2008)

The Parliamentary Inquiry Committee became active on the basis of protests of students and parents against the *Studiehuis* innovation in upper secondary education. The report starts with the assertion (page 9) that “the dissatisfaction about the knowledge level of students is high”.

The evidence that was collected for the report is based on opinions of teachers, students, parents and educational experts about the “*Studiehuis*” and on empirical evidence about the quality of Dutch secondary education. Since a systematic programme evaluation of the reforms in upper secondary education had not been planned and implemented, the attribution question (could the established quality

indicators be attributed to the educational reform) could not be answered. The actual information on the quality of secondary education that the report presented can be summarised as follows:

- parents and students are generally positive in their judgment of the quality of education, both concerning lower and upper secondary education (Dijsselbloem 2008, p 115), generally respondents do not attribute this positive state of affairs to the educational reforms;
- attainment indicators show a mixed picture, school careers remain strongly determined by early choices on entrance of secondary education, “up-streaming” to a higher level secondary school is a rare phenomenon;
- the Netherlands consistently scores relatively high (always among the top ten countries, world wide) on international assessment studies.

The conclusion from these results could be that the quality of Dutch secondary education is satisfactory, in terms of stakeholder judgments, international comparisons and attainment, although students that start relatively low have no chance to move to a higher level school. Next, since there appeared to be general disapproval of “new learning” with the innovatory programme and there are few data on the implementation of the reform of upper secondary education, one might conclude that the quality of Dutch secondary education remained high, *despite* the reforms. However, the flavour of the committee’s final conclusions is quite different when they introduce them by stating: “*The quality of education is reason for concern*”:

- The objective of the restructuring of the educational system, to raise the overall level of education, has not been achieved (other than an improvement in the throughput of the VMBO track).
- A clear decline in language and literacy skills can be seen, particularly in terms of reading ability, as well as in numeracy and mathematics.
- It is inappropriate to attach too much value to the relatively high position that the Netherlands enjoys in international rankings. A reliable conclusion to be drawn from the PISA study is that Dutch students lost ground in reading and numeracy skills during the period 2003–2006.

(*Source* Dijsselbloem Report, The Dutch House of Representatives, 2008)

The conclusions of the committee are not consistent with the empirically-based information that they present themselves. In [Chap. 4](#) we will show that the above three conclusions are much too negative.

3.3.4 The Annual Monitoring Report of the Ministry of Education “Focalisation on Trends” (2010 Edition)

The annual monitoring report of the Ministry of Education “Trends” gives a comprehensive picture of quality indicators in education. The overall message from the 2010 report is quite positive: participation in sensitive areas as early

childhood education and higher education is rising (for 2020 a further rise in participation of about 30% is expected), attainment indicators on school leaving without a degree are gradually improving and overall educational certification levels are increasing. Moreover, student achievement, as measured in international assessment programmes, is consistently far above the international averages. Remaining problematic areas are the position of students from low SES backgrounds and minority backgrounds on attainment and achievement indicators, although improvements for these latter groups can also be discerned in recent years. The ageing teacher population is another area of concern. The report also relates the average level of spending of education (seen from an international perspective) to the above-average outcomes of education in the Netherlands.

As it comes to the monitoring of educational process indicators, the report refers to the school reviews of the inspectorate. An important recent finding is that two-thirds of the schools now have adequate quality care systems functioning; this percentage used to be at about 40% of primary and secondary schools.

3.4 Conclusion

The Dutch educational system has some features that make it stand out in comparison to other countries. These are: a large sector of government-dependent private schools (2/3); high school autonomy and a well-developed educational support structure. A feature that should also be mentioned is a rather elaborate set of provisions in the realm of examinations, assessments, school inspection and school self-evaluation. The fact that the secondary school structure is very much stratified is to be considered as a somewhat more problematic given. Attempts at making the system more comprehensive by means of structural reforms have failed in the past. The degree of stratification in the educational structure in the Netherlands makes the system selective, implying a possible negative effect on the through flow of students to higher levels of schooling, particularly for students with less educationally favourable home background conditions. When looking at quality reviews that have been conducted over the last two decades, this latter equity-related issue has consistently been referred to as an area of concern. The actual indicators on equity, in terms of the variation in achievement levels among students and the degree to which achievement and attainment is determined by student background, however, are less unfavourable than is the case for other highly-stratified educational systems. Earlier reviews differ in the more optimistic or pessimistic flavour of their overall evaluative conclusions. The report of the Dijsselbloem committee remains closest to the prevailing common sense notion in the Netherlands that the quality of education is somewhat of a disaster. In our view, the more objective indicators paint a far more positive picture. In the remaining chapters of this report a more in-depth analysis on the current state of affairs will be given to put both positive points and areas of concern into perspective.

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Chapter 4

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

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

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

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

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

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

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

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

4.2 International Research: Problems and Limitations

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

4.2.1 Test-Curriculum Overlap

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

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

4.2.2 Definition and Operationalisation of the Respondent Population

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

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

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

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

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

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

4.2.3 Low Response Rate in the Netherlands

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

Table 4.2 Trends in learning performance in the Netherlands

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

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

4.3 The Netherlands in TIMSS, PIRLS and PISA

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

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

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

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

4.4 Development Over Time: Trends

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

Little difference can be seen in the trends for each subject or age group. Insofar as there is any actual decline in learning achievement, it would seem to be at both the primary and secondary level. Recent criticism (in political circles and in the media) of the quality of Dutch education has chiefly been directed at secondary education. However, Table 4.2 shows no statistically significant decline in this sector. In terms of primary education, the criticism is largely concerned with numeracy and mathematics. However, the figures also suggest a slight decline in literacy and reading skills. It is interesting to note that the indications of worsening learning achievement offered by the international surveys are not confirmed by the more detailed national 'PPON' surveys, which have been conducted by CITO since 1987, as described in greater detail below. The biannual PRIMA cohort studies actually show an improvement in language and numeracy skills between 1994 and 2002 (Mulder et al. 2005). The dataset used by PRIMA relies on two random samples of schools, the first of which is representative of the entire country. A supplementary sample is then drawn from those schools with a high proportion of 'disadvantaged' students. This makes it possible to accurately monitor the progress of all students whose parents have low educational attainment, regardless of ethnicity. Numeracy and literacy tests are given to students in the final kindergarten year and in Grades 0, 2, 4 and 6. Improvement was particularly noticeable among the younger students. In 2007, a new cohort study (COOL⁵⁻¹⁸) was introduced.

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

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

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

Source <http://statline.CBS.nl>

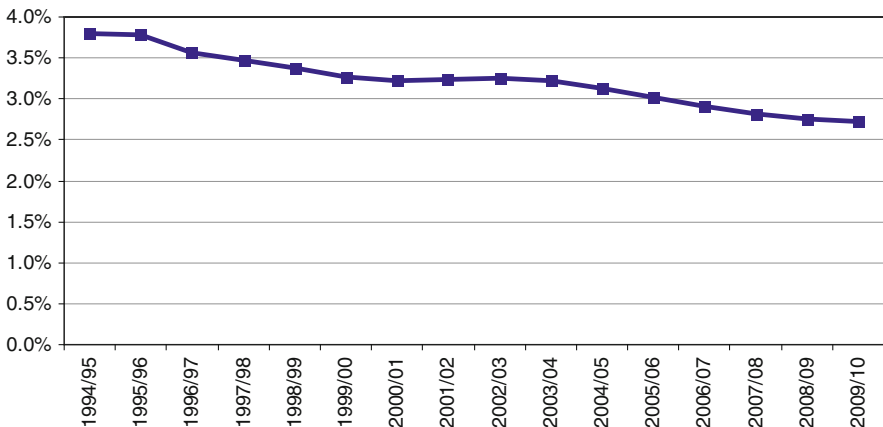


Fig. 4.1 Percentage of primary students in special education, 1984–2010

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

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

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

4.5 Trends in Educational Achievement Revealed by PPO Surveys

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

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

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

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

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

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

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

4.6 Education Inspectorate Reports

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

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

4.7 The Netherlands' Position According to International Education Indicators

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

4.7.1 Educational Level (Attainment) of the Dutch Population

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

4.7.2 Early School Leaving

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

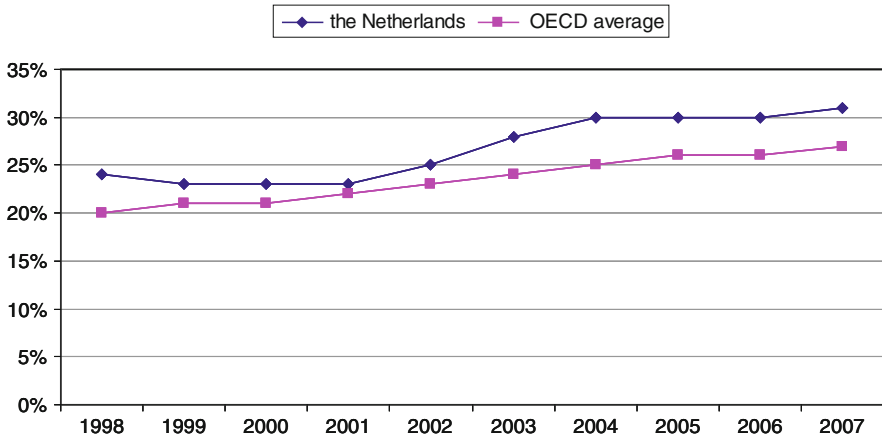


Fig. 4.2 Trends in national educational attainment; percentage of population aged 25–64 with university degree or equivalent

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

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

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

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

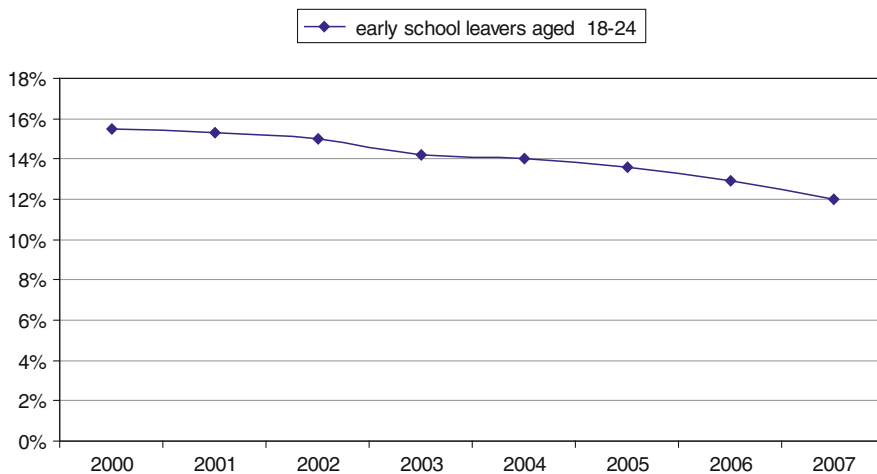


Fig. 4.3 Trend in early school leaving ('drop-out rate'), 2000–2007

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

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

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

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

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

4.7.3 Financial Investment in Education

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

At almost all levels, the cost per student in 2006 was higher than the OECD average. Only in primary education was the cost per student, at \$6,425, marginally lower than the average of \$6,437. When all levels from primary to tertiary are included in the calculation, the cost per student in the Netherlands is significantly higher than the OECD average (\$9,330 against \$7,840). NB The international comparison is based on the principle of 'purchasing power parity'.

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

4.7.4 Working Conditions for Teaching Staff

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

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

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

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

4.7.5 *School Autonomy*

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

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

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

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

4.8 Education in the Netherlands by Equity Indicators

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

4.8.1 Ethnic Background and Educational Achievement in International Comparative Studies

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Adapted from Hanushek and Woessmann (2005)

4.8.4 Trends in Educational Deficit and the Position of Minority Groups

The reduction of educational deficits has been high on the political agenda since the 1970s. A key aim has been to improve opportunities for those children whose circumstances stand in the way of a successful school career. Since 1988, a number of cohort studies (LEO, PRIMA, VOCL, COOL⁵⁻¹⁸) have been conducted to monitor the effects of government policy in this regard. The main objective of these studies has been to quantify educational achievement and attainment on the part of (disadvantaged) students in both primary and secondary education. The term ‘disadvantaged’ refers to a student whose parents have a ‘low level’ of education, regardless of ethnic background. The criteria have been subject to refinement over time, whereupon in this chapter we apply the definition of a student, neither of whose parents has gained any educational qualification higher

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

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

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

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

4.8.5 Position of Ethnic Minority Students in Dutch Education

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

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

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

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

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

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

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

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

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

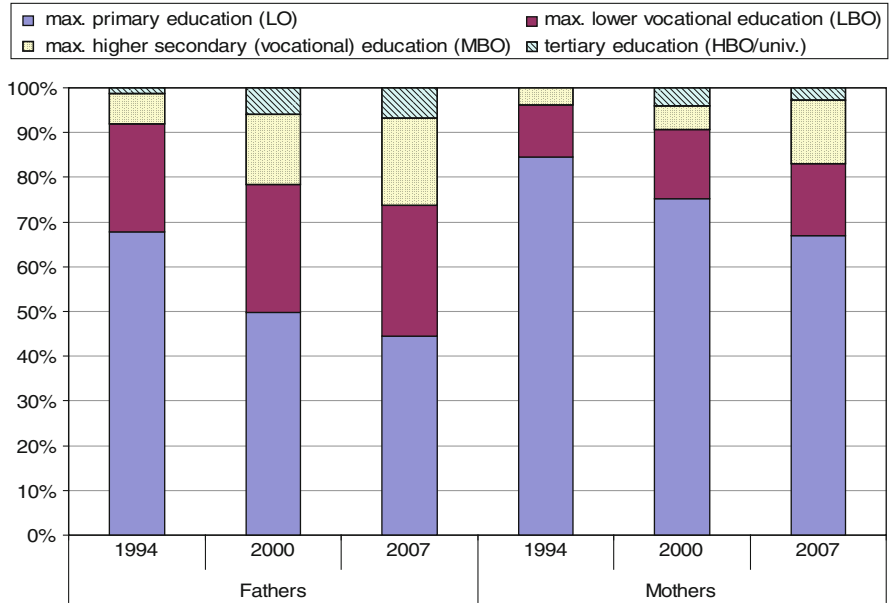


Fig. 4.4 Development in the educational attainment of Turkish parents, 1994–2007

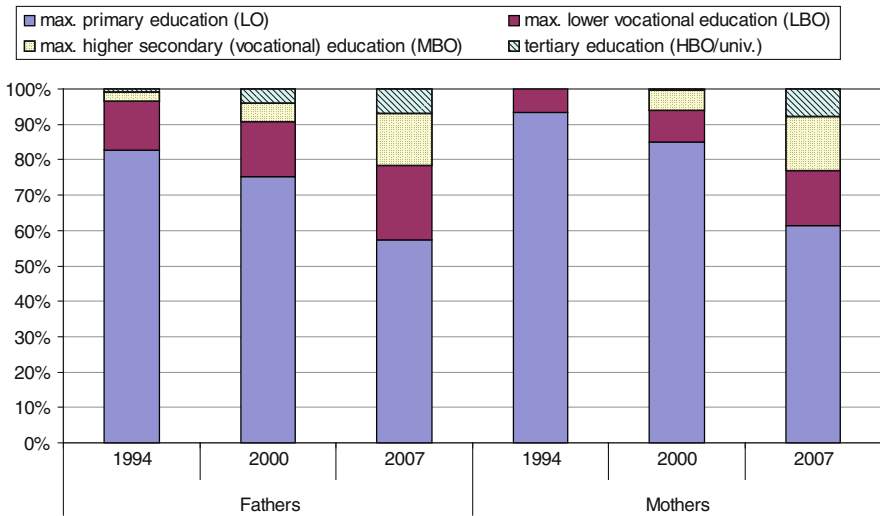


Fig. 4.5 Development in educational attainment of Moroccan parents, 1994–2007

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

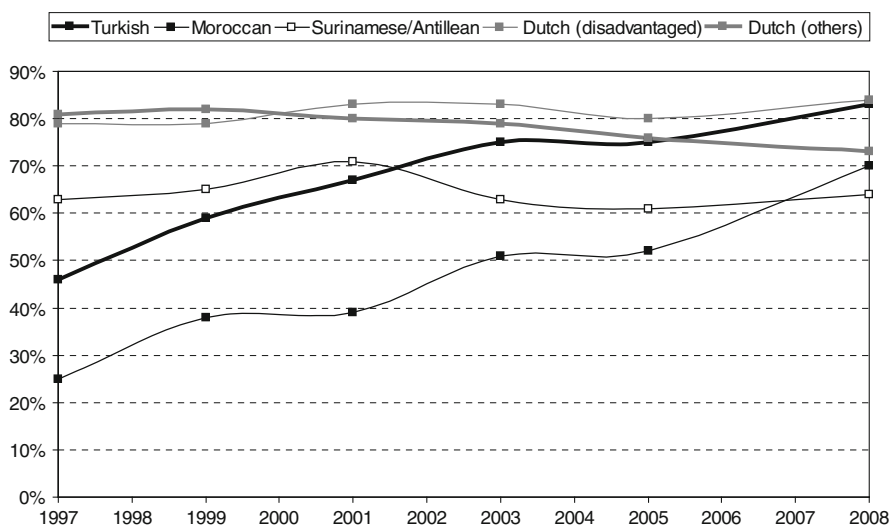
Table 4.11 Development in educational attainment of Dutch parents, 1994–2007

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

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

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

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

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

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

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

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

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

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

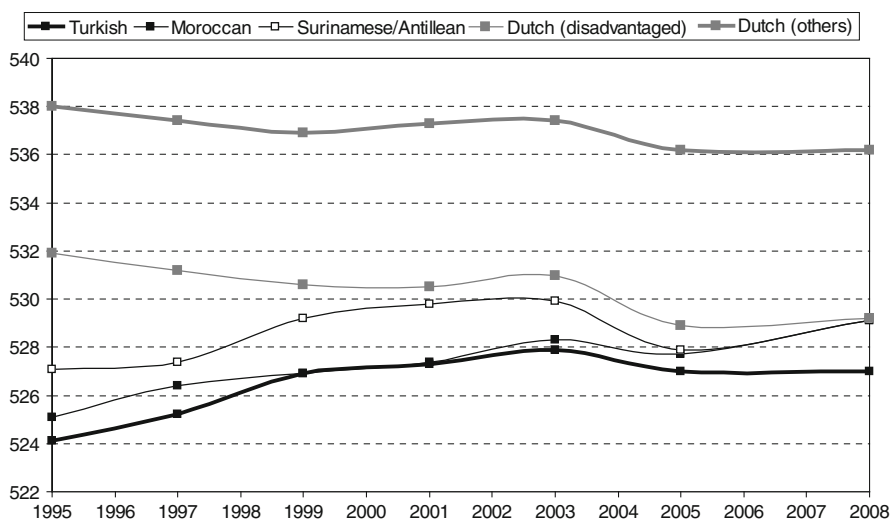


Fig. 4.7 Average total score in CITO assessments, by ethnic origin and (school) year

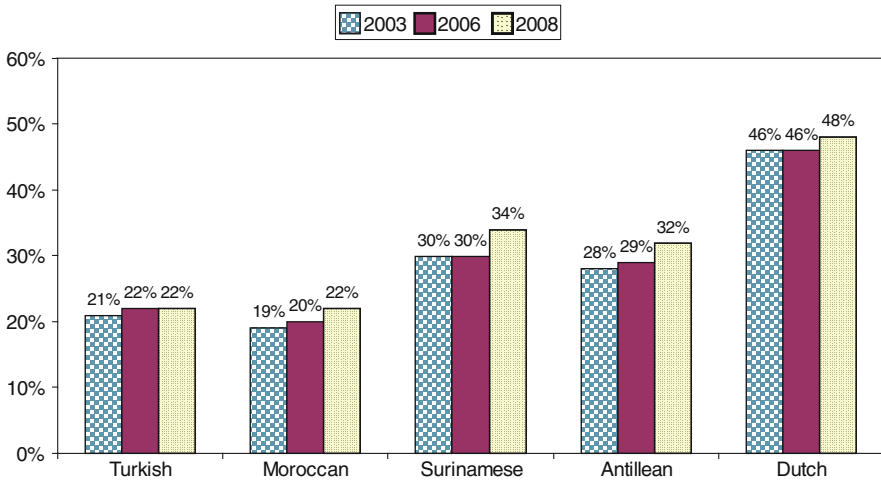


Fig. 4.8 Ethnic origins of year 3 HAVO/VWO students

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

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

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

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

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

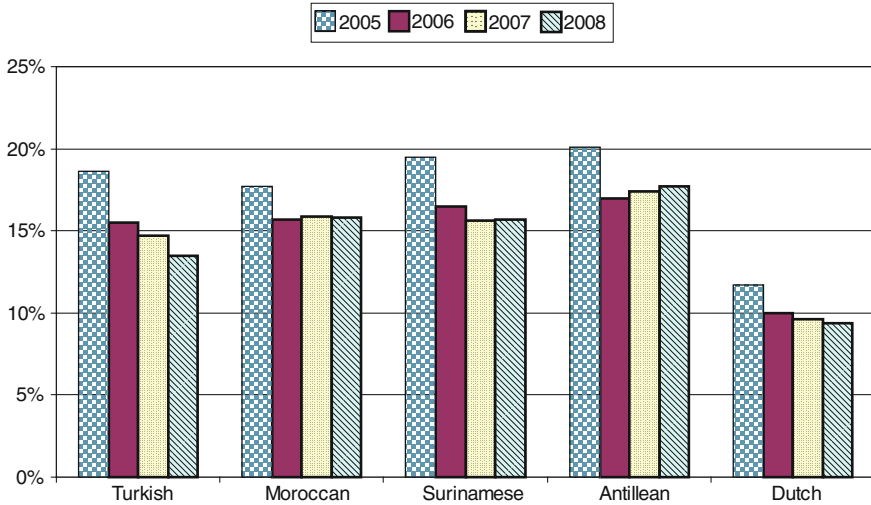


Fig. 4.9 Early school leavers (from MBO track) by ethnic origin

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

4.9 Conclusions

4.9.1 Educational Achievement and Attainment

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

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

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

4.9.2 Educational Level (Attainment)

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

4.9.3 Early School Leaving

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

4.9.4 Public Spending on Education

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

cost per student was above the OECD average in all sectors except primary education, in which the cost per student in the Netherlands (\$6,425) was fractionally lower than the OECD average of \$6,437. The main component of education spending is staff salaries. In the Netherlands, teachers' salaries are higher than the OECD average at both primary and secondary levels.

4.9.5 Equity

4.9.5.1 The Position of Ethnic Minority Students

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

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

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

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

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

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

4.9.5.3 Variance of Learning Achievement

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

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

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Chapter 5

The Selectivity and Vocational Orientation of Education Systems

Abstract Building partly on the indicators that were discussed and reviewed in previous chapters and partly on some additional measures, this chapter focuses on two specific aspects of education quality: selectivity and the extent to which education systems are geared to preparing young people for the labour market. The latter characteristic will be referred to briefly as the vocational orientation (For Dutch-speaking readers: vocational orientation is meant as a translation of *beroepsgerichtheid*.) of education systems. In the Netherlands as well as in a number of nearby countries, selectivity and vocational orientation appear to be closely related. We first address the fundamentally different paradigms that countries in various parts of the western world have adopted when it comes to selection and the importance of vocational learning. We then discuss three ways of measuring these. In the second half of this chapter, the attention shifts to the wider implications of selectivity, showing that despite uncertainties it is clear that countries have much to gain or lose in shaping their education policies.

Keywords Vocational education • Selectivity • Educational achievement and educational attainment • Social capital • Economic competitiveness

Building partly on the indicators that were discussed and reviewed in previous chapters and partly on some additional measures, this chapter focuses on two specific aspects of education quality: selectivity and the extent to which education systems are geared to preparing young people for the labour market. The latter characteristic will be referred to briefly as the vocational orientation¹ of education systems. In the Netherlands as well as in a number of nearby countries, selectivity and vocational orientation appear to be closely related.

¹ For Dutch-speaking readers: vocational orientation is meant as a translation of *beroepsgerichtheid*.

We first address the fundamentally different paradigms that countries in various parts of the western world have adopted when it comes to selection and the importance of vocational learning. We then discuss three ways of measuring these. In the second half of this chapter, the attention shifts to the wider implications of selectivity, showing that despite uncertainties it is clear that countries have much to gain or lose in shaping their education policies.

5.1 Countries' Different Paradigms Regarding Vocational Orientation

At first sight, it may seem odd to regard the vocational orientation of an education system as a variable. Education policy makers all over the world will argue that at least one of the goals of the education system in their country is to prepare youth for the world of work. Yet, empirically, we can observe significant differences in the extent to which this objective dominates countries' education policies and has influenced the structure of education systems. Moreover, this variable actually changes over time, even if these changes are infrequent. We first take stock of the situation in this regard in a selection of OECD countries, with a view to identifying different paradigms.

In a geographical area that is perhaps best described as Germany and most of its neighbouring countries, the vocational orientation of education systems seems stronger than anywhere else in the western world. While primary education is comprehensive, secondary education is differentiated right from the start. Selection takes place at the age of 12 in the Netherlands and as early as at age 10 in Germany and Austria (OECD 2005a, p. 405). At that moment, the age cohort is divided over one or more vocational tracks versus one or more non-vocational tracks. The latter will be referred to as "academic".

A very different paradigm—we may even speak of the opposite—is found in North-America, where all of secondary education is predominantly academic until a typical age of 18 (UNESCO 2010, p. 368). As all children remain in the same school type, this model can also be referred to as comprehensive. While this paradigm is said to fit better with the versatile and unpredictable needs of the labour market in a flexible knowledge economy² and does a better job in diminishing social disparities (Schleicher 2006), it really has historical roots. Secondary education in North-America has always been comprehensive, also in the industrial age. The need to develop a strong national identity in an immigrant population played an important role in the

² When people no longer spend their lives in one job, a broad preparation for working life seems more appropriate than a narrow and early focus on just one trade or craft (see, for instance, Carnoy 2004).

design of the comprehensive and predominantly academic secondary educations of states and provinces in North America.

An interesting case is Scandinavia,³ which has actually moved from the vocational paradigm to the comprehensive one, although some differences persist between the four countries in this sub-region. Sweden and Denmark may illustrate this. Motivated by the wish to enhance learning achievement and reduce (gender) disparities, Sweden opted for an entirely comprehensive system of secondary education, with primary and lower secondary integrated in the *Grundskola* (for ages 6/7-16) followed by the *Gymnasieskola* for upper secondary (16–19). Although Swedish students have a choice between a number of programmes within the *Gymnasieskola*, the transition from *Grundskola* to *Gymnasieskola* is not a moment of forced selection. Moreover, the programmes in the *Gymnasieskola* do not separate students entirely; a part of the curriculum remains common (Eurydice and Eurostat 2005, p. 57). In Denmark, in contrast, a range of no less than five different school types opens up for children leaving the *Grundskole* (Eurydice and Eurostat 2005, p. 51). This underscores the historical kinship of Denmark's education system with that of Germany. Yet the age of first selection in Denmark is 16, not 12 as in the Netherlands or 10 as in Germany.

More countries are nowadays making the move that Scandinavian countries made earlier. In Europe, Poland is a recent example (Wisniewski 2010). The UNEVOC, a UNESCO branch that studies vocational education worldwide, sees a global trend in this direction: “TVET⁴ at lower secondary level has traditionally been taken by ‘less academic’ students opting for a more vocational track in the secondary school or leaving the school system early and transferring to specialised vocational programmes or early apprenticeships. This type of provision has been phased out in recent years in many countries, particularly in the more developed regions, as governments have sought to introduce universal general education through the primary and lower secondary years. Developing nations, e.g., Indonesia, have recently replicated these trends. However, some provision at this level does remain in both OECD and non-OECD countries” (UNEVOC 2007, p. 19).

The Education for All Global Monitoring Report mentions concrete examples of OECD- and non-OECD countries that still provide vocational content at lower secondary level: the Netherlands, Flanders and former Dutch colonies (UNESCO 2007, pp. 58–59). However, as we just noted, Indonesia has left this group. It is remarkable that a middle-income country such as Indonesia, which inherited its education system from the time of Dutch rule, has abolished vocational education at lower secondary level while the Netherlands itself has not.

³ The information in this paragraph is mainly derived from “Key data on education in Europe 2009” and more in particular Chapter B on organisation, Sect. 1 on structures. Key Data is published by Eurydice and Eurostat (2009).

⁴ TVET stands for Technical and Vocational Education and Training.

Other countries are already taking the next step: to move vocational education out of the secondary stage altogether, locating it entirely and exclusively at tertiary level⁵ (Carnoy 2004). Against this backdrop, countries adhering to the German paradigm seem to run a risk of lagging behind even further. Exactly how worrisome this is depends on the impact of selectivity and vocational orientation on learning achievement; on educational attainment; on social cohesion; on economic competitiveness; and perhaps on other private and public outcomes. This report addresses some of these issues and touches upon others. A thorough investigation of all social and economic implications of selectivity in education is not possible within the scope of this report. But first we explore ways to measure selectivity and vocational orientation.

5.2 How to Validly Capture Selectivity and Vocational Orientation in Indicators

In [Chap. 2](#) of this publication, we linked selectivity to equity: if students with a low socio-economic status or with an immigrant background stay significantly behind in terms of educational achievement and/or attainment, we may speak of a selective education system. Less selective—or more lenient—education systems are the ones that do a better job mitigating the influence of student background. One could say that in this case, selectivity is measured by an outcome indicator: student achievement and the disparities therein or equity.

Below, we will explore three further approaches:

- We operationalise both selectivity and vocational orientation through a set of structural characteristics of education systems,
- We measure vocational orientation by the number of students in vocational tracks,
- We understand selectivity as the discrepancy between attainment and achievement.

This discussion paves the way for examining the relation between selectivity and vocational orientation. Thus far we have used these two concepts in conjunction. It is intuitively assumed that if an education system is selective by whatever measure, this is usually caused by the fact that it is narrowly geared towards preparing students quite specifically for distinct crafts, trades and

⁵ In some countries we find a relatively selective system of higher education, alongside forms of vocational or professional education that can be referred to as “tertiary non-higher” education. In other countries, for instance the USA, all tertiary education is called higher education, including courses that are equivalent to forms of tertiary vocational education in continental Europe located outside the realm of higher education. Apparently, some countries use a narrower definition of “higher education” and others a wider one. Hence, we prefer the more neutral term “tertiary education” above the term “higher education”.

professions, even at secondary level. For now we continue on this assumption, but we will scrutinise it later on.

5.3 Selectivity and Vocational Orientation Assessed by Structural Characteristics

In this first approach we look at structural characteristics of education systems as such, rather than at their performance. Building on an approach pursued by Luyten and others (OECD 2005b, pp. 48–62), the OECD (2005a, p. 403) developed a composite indicator called *average of standardised indices of stratification*. It is the average of the following three constituents⁶:

- *The number of school types or distinct educational programmes available to 15-year-olds.* Among OECD-countries, this number appears to vary from one (e.g., in North America and Scandinavia) to four (e.g., the Netherlands, Germany, Belgium) or even five (in the Czech Republic and the Slovak Republic). It should be noted that the concept of school type or distinct education programme is somewhat arbitrary. The Dutch VMBO, for instance, is considered as one school type. But within it, there is both vertical differentiation (levels) and horizontal differentiation (a multitude of equivalent tracks that correspond with different crafts and trades in the labour market).
- *The proportion of 15-year-olds enrolled in programmes that give access to vocational studies at the next programme level or direct access to the labour market.* For the Netherlands this concerns the school type called VMBO. According to national data, about 56% of the Dutch secondary education students of age 15 were enrolled in vocational tracks in 2006⁷ (Ministry of Education, Culture and Science 2009, p. 17). The OECD reports an even higher figure: 61.3% in 2003 (OECD 2005a, p. 405). Either figure is by far the highest value of all countries, as we shall see later in this chapter.

⁶ Exactly how the composite indicators has been calculated is explained in OECD (2005a, b, p. 405).

⁷ According to national data (Ministry of Education, Culture and Science 2009, p. 17) 94% of all children that left primary school in 2006 in the Netherlands went to regular secondary education. These national data do not immediately distinguish between the various tracks. After 2 years of secondary education, however, 38% of the original primary school leavers is found in tracks that prepare them directly for higher education. Another 53% is in the vocational track called VMBO. 6% went directly from primary education to forms of special education, half of which in a vocational track called “praktijkonderwijs” or practical education. The remaining 3% seems to have dropped out by the age of 14 or 15. If we add the 53% in the VMBO to the 3% in the “praktijkonderwijs”, we obtain the 56% mentioned in the text. The reason for the difference with the OECD figure of 61.3% for 2003 is not clear. The two figures have different years of measurement—2003 versus 2006—so real change could have taken place in the meantime, but this unlikely to explain all of the difference.

- *The first age of selection in the education system.* As noted before, this is age 12 in the Netherlands and age 10 in Germany and Austria (OECD 2005a, p. 405). In three eastern European countries and in Turkey, we find a first age of selection of 11. Remarkably, the age mentioned by the OECD for Canada and the USA is 16, not 18 as one would expect based on the fact that even between ages 16 and 18 only one school type is available. This suggests once again a degree of arbitrariness. There may be a *transition* at age 16—from junior to senior high-school—but that is not the same as *selection*. Another issue that complicates the matter is the difference between selection and choice. In the case of selection, a student is more or less forced to enter a track that may be lower than the one to which he aspires, while in the case of choice it is a matter of preference and free will. For students in the Swedish Gymnasieskola, there is a palette of “programmes” available from which students can choose. These programmes may cover only part of the curriculum. Students may end up following a predominantly general programme, a predominantly vocational programme, or a combination of the two and in any case they remain together in the same school type throughout upper secondary education (Eurydice and Eurostat 2005, p. 57). So, if we can refer to the sorting of students over these programmes as “selection” at all, it concerns a very “light” form of selection compared to the much more severe and decisive forms of educational selection in, for instance, Germany and the Netherlands.

We may conclude that the OECD too, links selectivity closely to vocational orientation, for the first and third constituents of this composite indicator pertain to selectivity, while the second pertains to vocational education. Second, one could even argue that the name of this composite indicator—*average of standardised indices of stratification*—is somewhat misleading. It is mainly the first constituent—the number of parallel tracks—that really indicates stratification. The second is about the “volume” of students in the vocational track and although far from irrelevant, this is not the same as stratification. The third constituent is the age of first selection, which certainly indicates selectivity but not stratification and it seems to have been applied in a somewhat arbitrary manner. Furthermore, it would be worth considering developing this composite indicator further, e.g., by measuring stratification not just at age 15 but also at age 18, when most students are about to complete secondary education. In Denmark, for instance, there is only one track available for 15-year-olds, but several for 18-year-olds, as we noted above.

Figure 5.1 represents the indicator for all OECD countries with the exception of the United Kingdom. Note that data for the second constituent—percentage of 15-year-olds in vocational tracks—were missing or not applicable for five countries including Germany and Canada. For convenience, we shorten the name of the indicator to Index of Stratification.

As we would expect, we find that Scandinavian countries and the USA have the lowest values, together with New Zealand and Australia. Canada’s somewhat higher value must be attributed to its missing value for the second constituent, for Canada has the lowest number of tracks open to 15-year-olds, and the highest age

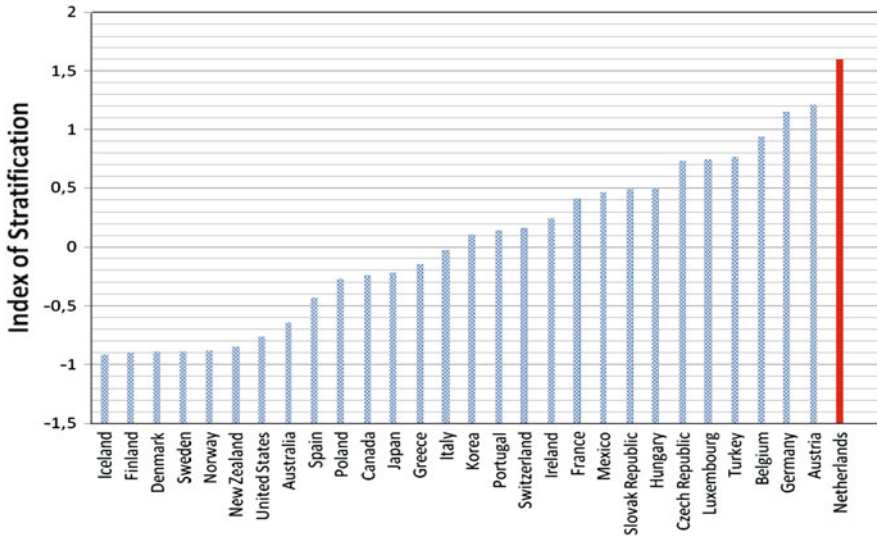


Fig. 5.1 Index of Stratification (2003). *Source* Based on OECD 2005a, p. 405

of first selection. Again as expected, we find Germany and most of its bordering countries to the right-hand side of the spectrum, with an extreme score for the Netherlands towering above even Germany and Austria, where first selection takes place at age 10. A Scandinavian country and at the same time bordering Germany, Denmark would probably move a few places to the right if stratification and participation in vocational tracks was also measured at age 18.

5.4 The Number of Students in Vocational Tracks as a Proportion of Secondary Enrolment

As we saw above, the second constituent of the Index of Stratification is the number of 15-year-old students that find themselves in a vocational track, as a proportion of all 15-year-old enrollees. UNESCO data allow us to zoom in further on this constituent, distinguishing (i) the share of vocational enrolment in all of secondary education (the checked bars in Fig. 5.2); (ii) that same indicator for just lower secondary education (the solid bars), and (iii) the same for upper secondary education. UNESCO uses its own system of country grouping, one of them being “North America and West Europe”. From this group we have deleted all OECD non-member states and to it we added OECD member states in other regions of the world. Note that in Fig. 5.2, data for “% voc low” (the solid bars) are missing for the Czech Republic, France, Poland and Spain. In all other cases the value is zero if no solid bar is shown. For Canada and United States, no values are missing; they are all zero.

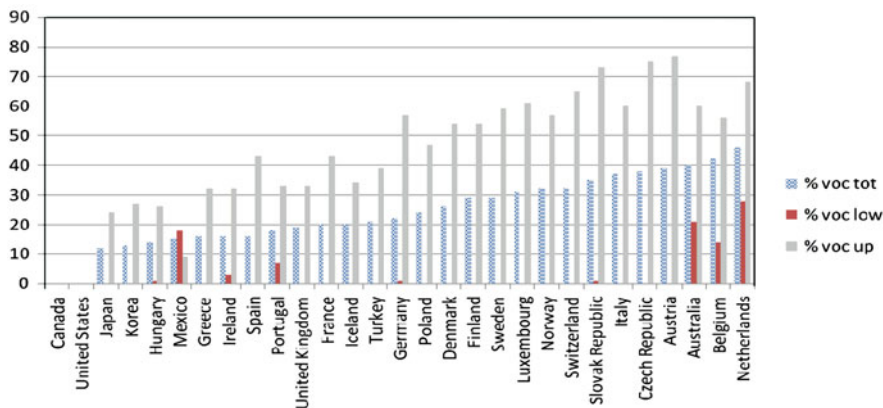


Fig. 5.2 Enrolment in vocational tracks as a proportion of secondary enrolment (2007). *Source* UNESCO Institute for Statistics 2009, pp. 106–113

Figure 5.2 underscores clearly how enrolling substantial numbers of children in vocational tracks at lower secondary level is almost endemic to the Netherlands and Belgium. Mexico too, has a high value but this likely to be related to the different employment structure; an abundance of low skilled labour causes the solid bar to be higher than the tinted one. Small numbers of students in vocational tracks at lower secondary level can also be found in a number of countries on the periphery of Europe and also in Germany. The most remarkable score on “% voc low” is perhaps the one of Australia. This warrants special attention.

According to the OECD data that underlie the Index of Stratification, Australia is one of the countries with only one track available to 15-year olds. Selection starts no earlier than at age 16. So unless Australia’s high value for “% voc low” in Fig. 5.2 is an error, it must be the case that accessing the vocational track at lower secondary level is a matter of choice rather than of selection. In any case, the distinction between the vocational track and other tracks is not strong enough for the OECD to speak of a distinct *school type or distinct educational programme* (OECD 2005a, p. 405).

Similarly, UNESCO reports substantial numbers of students in upper vocational education for Norway and Sweden, while the vocational orientation of these courses is less pronounced than that of vocational tracks in Germany and some of its neighbours. Thus, criteria for deciding whether or not a programme is distinctly “vocational” seem to differ. Another indication for this is that the OECD has 61.3% of all Dutch students at lower secondary level in vocational programmes, while UNESCO reports only 28%. This difference is certainly too large to be explained by changes in the period between the 2 years of measurement (2003–2007). Probably the explanation lies in those VMBO students who are enrolled in the so-called theoretical pathway (*theoretische leerweg*); they may be included in “vocational” by the OECD but excluded by UNESCO.

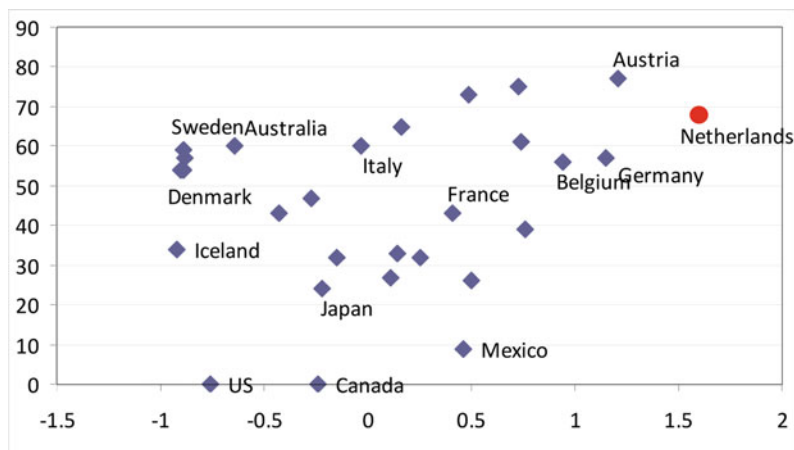


Fig. 5.3 The share of enrolment in vocational programmes in upper secondary education (2007), by countries' score on the Index of Stratification (2003). Sources UNESCO Institute for Statistics (2009), pp. 106–113 (for vocational upper secondary enrolment) and OECDa (2005), p. 405 (for index of stratification)

It follows that data on the structure of education systems in terms of selection, tracking and vocational orientation are bedevilled by differences in interpretation. First, countries themselves may have different criteria for deciding when to speak of a distinct school type, education track or stream. Second, OECD, UNESCO and EU appear to differ in their interpretation of data.⁸

Figure 5.3 contrasts the Index of Stratification (horizontal) with the share of vocational enrolment at upper secondary level (vertical). It shows to what extent the Index—which concerns systems characteristics at lower secondary level—predicts the number of students that will end up in vocational tracks in upper secondary education.

As one would expect, the pattern shows a tendency towards positive correlation but there is clearly more convergence on the right-hand side of the grid than on the left-hand side. In fact, there is a bit of a “frontier” consisting in countries that have a low score on the Index in common (between -1 and -0.75) but differ strongly when it comes to vocational enrolment at upper secondary level. At the bottom of that frontier we find the USA with no students in vocational tracks at upper secondary level—Canada would have had the same position were it not for missing data—and above the USA we find Iceland (with 34% in vocational tracks in upper secondary), Denmark (54%), Finland (54%), Norway (57%) and Sweden (59%). But as we noted earlier, the nature of upper secondary vocational

⁸ OECD, UNESCO and EU derive their data from one and the same questionnaire, which is completed by the countries themselves. Therefore, any differences in outcomes between the three organisations must stem from their interpretation of data, not from differences between the data as such.

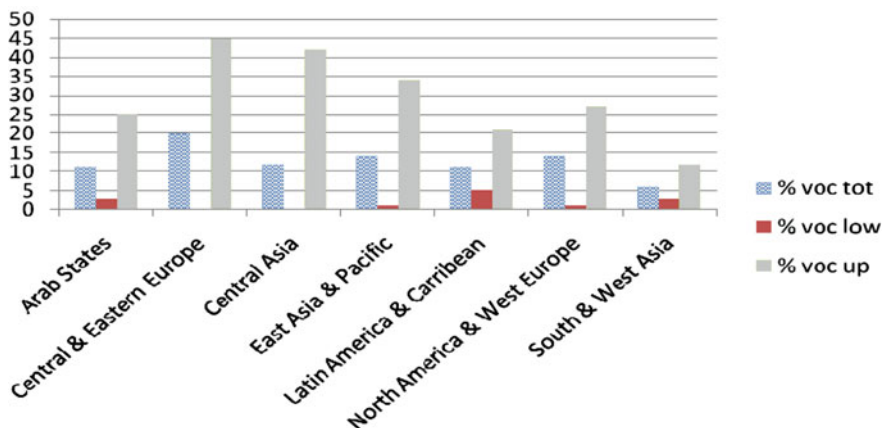


Fig. 5.4 Enrolment in vocational tracks as a proportion of overall secondary enrolment, for all, for lower and for upper secondary education (2007). *Source* UNESCO Institute for Statistics (2009), pp. 106–113. *Note* these are weighted averages in which the data of large countries weigh more heavily. In Latin America, for instance, the high value for “% voc low” is strongly determined by Mexico. Conversely, the value for “% voc up” in North America and West Europe is lower than Fig. 5.2 optically suggests, which is partly explained by the low value (nil) of the USA. Note also that the country grouping North America and West Europe is not the same as the OECD group

programmes in Scandinavia is generally different from those in countries on the right-hand side of the grid.

Figure 5.4, finally, provides the global picture regarding vocational enrolment. In no region in the world does the vocational enrolment share at lower secondary level come close to that at upper secondary level.⁹ This is not to say that such would not be a good situation for developing countries. As the example of Mexico suggests, an abundance of low-skilled labour would justify having a high degree of vocational enrolment at lower secondary level. However, many developing countries have inherited their education systems from their former colonisers. As a consequence, lower secondary education is predominantly academic, while post-primary vocational learning has emerged mainly in informal learning settings, often supported by NGOs (UNESCO 2004; UNEVOC 2007).

It is against this global backdrop that the situation in highly developed and prosperous countries like Belgium and the Netherlands strikes us as very exceptional. Even in Germany and Austria, where the selection towards vocational pathways takes place at age 10, children are generally not exposed to hands-on vocational training in lower secondary education.

Nevertheless, the different ways in which countries and international organisations (OECD, UNESCO) seem to interpret data about vocational enrolment seem to

⁹ Regional data for Sub-Saharan Africa are missing, but national data show a pattern that is similar to that for other developing regions.

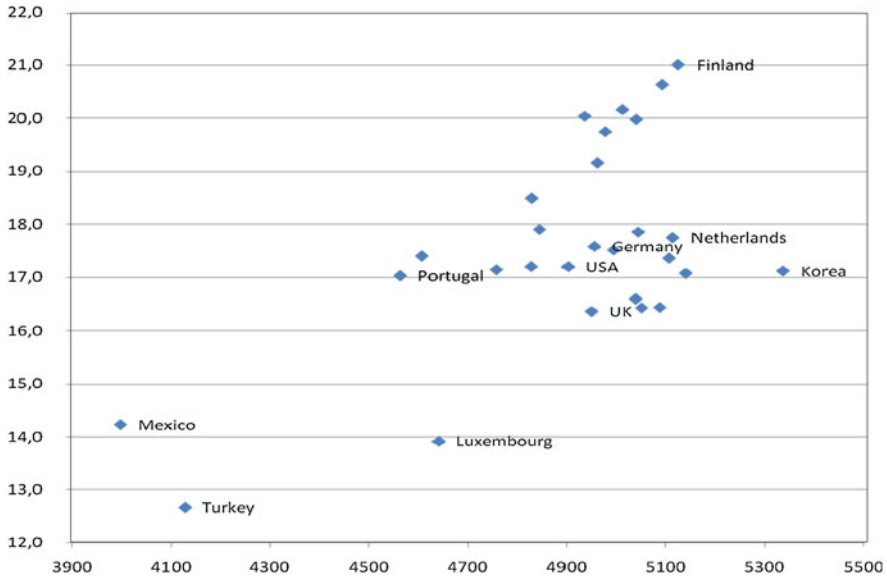


Fig. 5.5 Education expectancy (2007) by “cognition”. Sources OECD (2009, 2010)

warrant further study, zooming in on countries’ education systems and using national data. This cannot be done for this study but it seems worthwhile for further decision with regard to the sensitive issue of selectivity of education systems.

5.5 Selectivity Understood as the Discrepancy Between Attainment and Achievement

A fundamentally different approach to understanding selectivity consists in looking at outcomes of education systems rather than their structures or participation patterns. As previous chapters have noted, two key categories of educational outcome are attainment and achievement, the former being the number of years spent in education and the certificates, diplomas and grades obtained, and the latter being the “real” competencies that have been acquired, as measured during exams in schools and during national and international surveys.

Intuitively, one would assume that attainment is strongly associated with achievement. A child that begets good grades will spend longer in education and reach higher levels than a child of lesser talents. Clearly this holds true at classroom, school and usually also national levels. But across countries the picture may be different. The requirements for obtaining a diploma at a given ISCED level can be more demanding in one country than in another. In one country these requirements may be determined at central level, while in other countries they may be left to the discretion of regional authorities or even schools themselves.

Figure 5.5 paints the general picture for all OECD countries except Canada and Japan, which lack the data for the measure of attainment that we use here. On the horizontal axis of Fig. 5.5 we find student achievement, proxied by a composite indicator called “cognition” that Hanushek and Woessmann (2009) compiled for countries that ever participated in global assessments, such as TIMSS and PISA (see also OECD 2010, p. 13). On the vertical axis we find educational attainment, proxied by an indicator called “education expectancy”. This is the average number of years (from age five onwards) that children are expected to spend in education on current trends (OECD 2009, p. 300¹⁰). Admittedly, there is a time gap between the two indicators. The indicator “cognition” is based on several student achievement surveys from the past while the indicator “education expectancy” is based on more recent data. However, the assumption we wish to examine is that achievement influences attainment. This means that a rather stable measure of achievement such as the indicator called “cognition” is a more robust basis for this analysis than, for instance, the most recent single edition of PISA.

In general, Fig. 5.5 shows a tendency towards the positive correlation that one would expect to find between the two indicators: the higher a country’s level of student achievement, the longer its students spend in education. The two middle income countries that are member states of the OECD—Mexico and Turkey—are found at a much lower level of achievement but also at a much lower level of attainment compared to the more homogeneous cluster of high-income member states, in the upper-right quarter of the grid. Regional student achievement surveys in East Africa, West Africa and Latin America show that low-income countries such as Tanzania, Mali and Peru are found even beyond Mexico and Turkey but once again, their attainment levels are much lower too (UNESCO 2004, pp. 237–239).

Globally, one can thus say that achievement and attainment are well related. There seems to be a kind of meritocratic consensus: by performing well in school, students merit a right to continue longer in education. Attainment levels may vary dramatically across the world but they are related to achievement and the ratio between the two seems relatively stable. However, the picture changes if we zoom in on the cluster of high-income countries, as Fig. 5.6 does.

Within the group of high-income countries, the pattern seems to reveal two distinct tendencies. First, there is a remarkably tight diagonal string of countries from Finland down to Portugal. It includes (i) all Scandinavian countries, (ii) all South European member states, (iii) the two South Pacific member states, and (iv) Belgium and Poland as more isolated examples. One could say that the countries on this string sit well on the global regression line, adhering to the meritocratic consensus. With the exception of Belgium, they all tend to have low values on the Index of Stratification.

¹⁰ The indicator called “education expectancy” is indicator number C1.7 in the 2009 edition of Education at a Glance. It is not included in the report proper but available on the web. A link is provided on page 300.

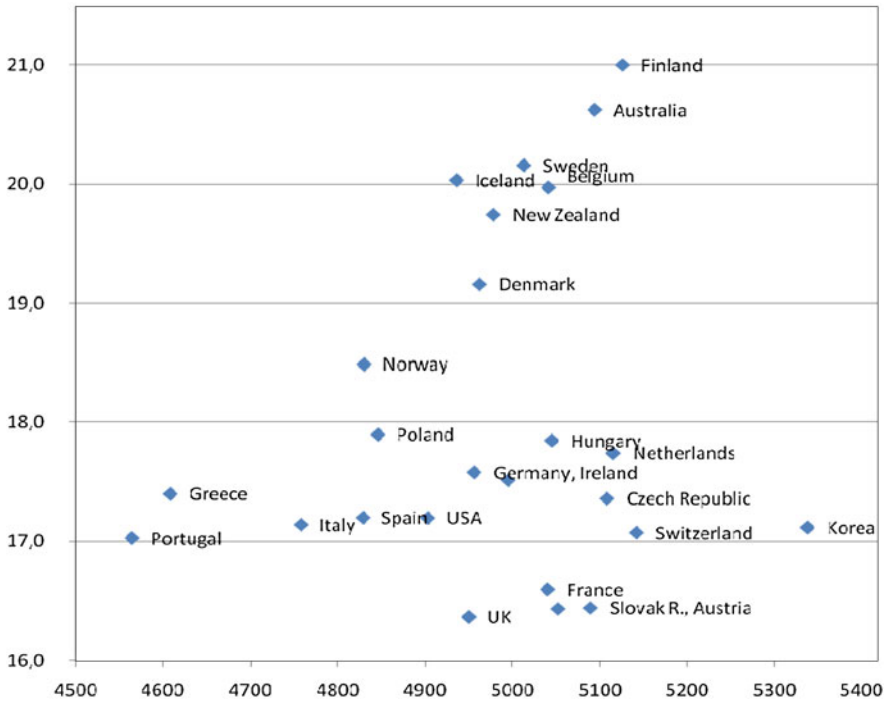


Fig. 5.6 Education expectancy by “cognition”. Sources OECD (2009, 2010)

Second, there is a cluster of countries to the right-hand side of this string. All have generally high values on the Index of Stratification with the exception of Korea, which pairs a low score on attainment to a very high score on achievement. Japan is not shown in the figure for lack of data for the indicator called education expectancy but it is in a similar position as Korea.¹¹

Thus, if we understand selectivity as low attainment relative to achievement, we could conclude (i) that the countries with high scores on the Index of Stratification tend to be selective, and (ii) that the two Asian member states of the OECD are particularly selective, notwithstanding their moderate scores on the Index of Stratification. Looking for an explanation for these findings, we discuss the European and the Asian countries distinctly.

To begin with the latter, it must first be noted that education in Japan and Korea is extremely competitive. Parents of children in primary school are often very ambitious to enrol them in the most reputable secondary schools, since in their turn the best secondary schools provide the best chance to enter the most reputable

¹¹ Japan’s value for the indicator “cognition” is 5310 (Hanushek and Woessmann 2009), while other indicators show its attainment level is also comparable to that of Korea (see for instance OECD 2009, indicator A).

universities. Once there, the opportunities for obtaining a lifetime job in one of the large industrial companies are good. So although employers do not exercise a direct influence on the content of education—as they do in Germany and its neighbours—and although vocational enrolment at secondary level is low in Japan and Korea (see Fig. 5.2), it is the case that societal competition trickles down all the way into the education system. For instance, many Japanese children attend so-called *juku* or cram-schools, where supplementary education is provided to enhance their chances for access to good schools. Even some of these *juku* are selective in that they may refuse weak learners on the grounds that these could affect their reputation of delivering their clients to the top-schools. Such phenomena make it difficult for western OECD members states to emulate the educational top-performance of Japan and Korea. Finland, for instance, is much more eagerly promoted as the leader that needs to be followed.

Historically, competitiveness at low levels of education stems from the time that countries were unable to provide universal access: if the capacity of secondary education is only sufficient to accommodate a small percentage of primary school completers, one might as well select the best learners to proceed (and sadly, the ones with the richer parents). Such is still the norm in many developing countries and for the transition from secondary to tertiary education it is common almost worldwide. However, scarce capacity cannot possibly be the argument for selectivity at secondary level in the group of countries that we have labelled “Germany and its neighbours”.

These countries are characterised by a culture of triangular negotiation between employers, trade unions and government on any subject of common concern, including education. Employers exercise a strong influence on education, using the argument that they are in the best position to determine which sets of competencies fit best the various trades, crafts and professions that are found in the world of work. This tradition stems from the time of the guilds and antagonism between employers and trade unions is remarkably absent. Trade unions too, tend to believe that tight fine-tuning between educational programmes and jobs is in the best interest of their (future) members.

Thus, as the education systems in these countries function predominantly as a sorting machine to guide young people as quickly as possible to the position they will eventually obtain in the world of work, selection at an early age and farfetched differentiation are the understandable result. It seems logical: if early assessment shows that a child has the potential to pursue an education at tertiary level, it should be kept on an academic track and if another child does not have that potential, it might as well waste no time and enter a vocational track as early as possible.

This paradigm has often been questioned, partly on more technical grounds (e.g., there is a risk of flaws in early assessment), partly on more ideological grounds (e.g., from a child rights perspective); this discussion will not be rehearsed here. What we do question here, be it in a merely explorative manner, is whether even the macro-level argument still holds true: does an education system that aims at detailed fine-tuning between vocational programmes at secondary level on the

one hand and trades, crafts and professions on the other, still serve society and the economy in the best way possible?

5.6 The Societal Implications of Selectivity in Education

Originating in the medieval guilds system, the German educational paradigm has clearly served very well in the industrial age. The fabulous post-war economic recovery of Germany, *das Wirtschaftswunder*, is a strong point in case. But does the paradigm still fit the knowledge society with its dynamic work settings and demand for flexible labour (Carnoy 2004; Rychen and Salganik 2003)? A short review of the literature on the major schools of thought on what determines success in the business sector, points at developments to which the German education paradigm seems to offer no response (van Ravens 2009, p. 45). More particularly, there is a broad consensus that expansion of higher education is crucial for international competitiveness (Minne et al. 2007, p. 5), while countries with a high score on the Index of Stratification are not doing a good job in that respect, as Fig. 5.7 shows.

Figure 5.7 comes as no surprise after Fig. 5.6, which showed that countries with a high score on the Index of Stratification see lower levels of attainment than their achievement levels would justify. If a country lags behind in terms of education expectancy, this is bound to materialise in lower levels of tertiary education achievement, as enrolment at primary and secondary level is close to universal in all countries. The round dot represents the Netherlands. Situated high above the

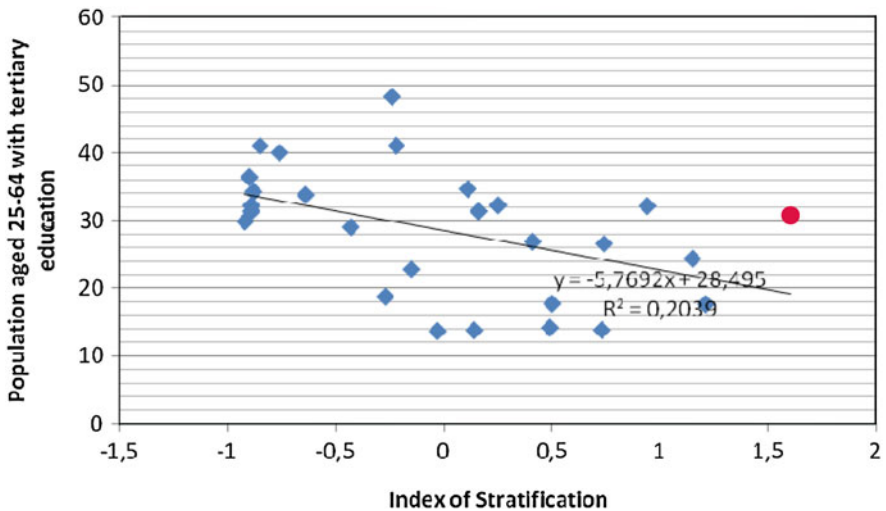


Fig. 5.7 Population aged 25–64 that completed tertiary education (2007) by Index of Stratification (2003). Source OECD (2005a, 2009)

regression line, it does a good job in escaping the trend: it has a larger volume of higher education than its high position on the Index of Stratification predicts. Having approached a certain ceiling in this respect, it may find it difficult to expand further without reducing selectivity.

In the following sections we further discuss the impact of education on the economy, looking both at economic growth and competitiveness, while distinguishing attainment, achievement and selectivity.

5.7 The Economic Returns of Attainment and Achievement: A Brief History

A thorough review of the literature on the economic returns of education would go beyond the objectives of this report but even a brief history of this literature shows that it has not yet reached an undisputed set of core insights and conclusions. In fact, very different positions have been taken in recent years, even by one and the same author.

For a long time, economists have investigated the relation between attainment—or “years of schooling”—on economic growth, focusing both on differences across countries and changes over time (Hanushek 2004). For a long time too, little evidence was found for a positive relation between attainment and growth, until De la Fuente and Domémech (2006) improved data quality and found that a lasting increase in education expectancy by 1 year will eventually bring GDP to an 8% higher level than otherwise would have been the case. The OECD is more cautious, putting forward a figure of 3–6%. This figure is quoted from its flagship publication *Education at a Glance* (OECD 2006, p. 152), so this can be regarded as the OECD’s official stance. The private returns for an extra year of schooling are claimed to vary from 5 to 15% of people’s lifetime earnings (Minne et al. 2007, p. 1).

More recently, the question was raised whether the quality of education, proxied by measures of student achievement, had an impact on economic output over and above attainment. In a paper commissioned by the Education for All Monitoring Team, Carnoy (2004) answered negatively. He argued that what counts is primarily the expansion of schooling, providing access to ever larger numbers of youth to ever higher levels of education and hence driving productivity and growth. High educational achievement only plays a role in that it leads to higher attainment, according to Carnoy. Achievement, in other words, has no impact in and of itself. Confronted with the same question, Hanushek (2004) is more nuanced but nevertheless draws the conclusion that prosperity in the USA has grown over the twentieth century as a result of universal access to high school and the expansion of higher education, notwithstanding the relatively low average gains in cognition per year spent in education in the USA.

In 2007, however, Hanushek and Woessmann investigated the issue once again. They now find that both attainment and achievement make a difference, and the

former even more so than the latter (Hanushek and Woessmann 2007). If a country manages to increase achievement by one standard deviation, it may expect to see 2% more growth over a period of 40 years than would have been the case in the absence of the policy intervention.

By 2010, the pendulum has even swung all the way to the other extreme. In a study for the OECD (2010, p. 5)—focusing on OECD countries—the same authors now claim that attainment does not matter at all: *it is the quality of learning outcomes not the length of schooling, which makes the difference*. The report does not make clear whether the OECD has now officially left its earlier claim that 1 year of schooling boosts GDP by 3–6%. This contradiction—claiming a strong impact of attainment on growth first and then claiming no impact at all—may confuse policy makers.

In any case, the extreme stance taken by Hanushek and Woessmann (OECD, 2010) is difficult to comprehend. The Czech Republic, for instance, has an excellent track record when it comes to student achievement but fails to translate this into high enrolment levels in higher education. In contrast, Norway has a much less selective education system. Despite their significantly lower levels of achievement compared to Czech students, much larger numbers of Norwegian youth enter university. Once in university, they are exposed to state-of-the-art knowledge of whatever their field of study is. Most young people in the Czech Republic never become acquainted with that readily available volume of knowledge and it is difficult to imagine that they can fully compensate this through the generic competencies they acquired during primary and secondary education.

While we must conclude that a consensus has not yet been reached on the relative importance of attainment and achievement for economic growth, we must also note that the economic impact of selectivity, our third aspect of educational outcomes, has not been investigated at all. This report is in no position to compensate for this but an initial exploration of this issue is provided in the next section.

5.8 Educational Stratification and Economic Competitiveness

Figure 5.8 plots the so-called Competitiveness Index of the World Economic Forum against the Index of Stratification. This Competitiveness Index provides a much more direct indication of a nation's ability to compete in the global marketplace than growth differentials. Economic growth as such is partly determined by forces that have little to do with innovation in services and industry. For instance, sheer population growth causes GDP to rise. The GDP also includes the costs of combating pollution and crime, making innovative nations who manage to prevent pollution and crime look weaker than nations that fail in that respect.

It must be emphasised that Fig. 5.8 shows merely the bi-variate picture and in reality, the relation between stratification and competitiveness is likely to be confounded by various additional variables.

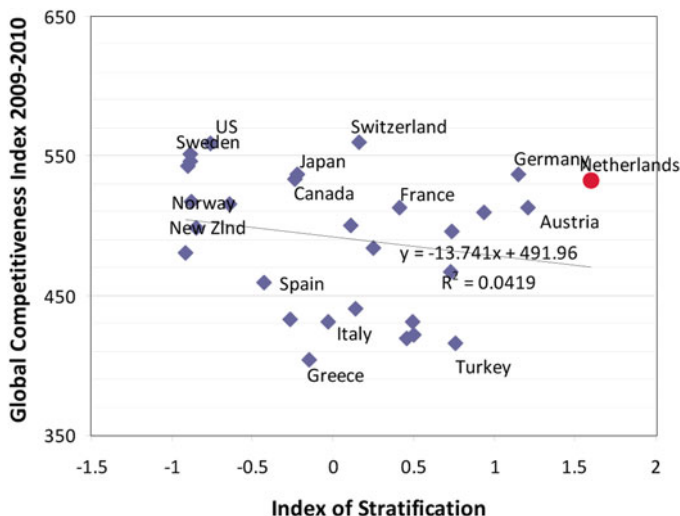


Fig. 5.8 OECD countries by stratification (2003) and competitiveness (2009). *Sources* OECD (2005a) and World Economic Forum (2009)

Figure 5.8 shows that the relation between stratification and competitiveness is weak but it is negative, not positive. The figure suggests that countries with highly-stratified education systems are to some extent less competitive than others, not more competitive. By itself, Fig. 5.8 may not suffice to *verify* that conclusion, but the figure does tend to *falsify* the opposite: the often heard claim that reducing educational selectivity will negatively affect the economy seems untenable. True, if education systems are made less selective it may be the case that labour markets need time to adapt to the new situation. Employers may need to adjust their recruitment and training policies. But there are no reasons to assume that economies cannot function without educational selectivity. There are simply too many economically successful countries with lenient education systems to prove the opposite.

5.9 Testing the Competitiveness Approach with Attainment and Achievement

In order to “test” the approach of using the Competitiveness Index of the World Economic Forum, we applied it in the same manner as in Fig. 5.8, but now with attainment (Fig. 5.9) and achievement (Fig. 5.10) as the independent variables.

Although the two outliers in the lower-left corner—Mexico and Turkey— influence the correlation and although once again the correlation is not strong and is possibly confounded by other variables, one does note that the line goes up, as one would expect. The same goes for the line in Fig. 5.10, indicating a positive—and indeed somewhat stronger—correlation between achievement and competitiveness.

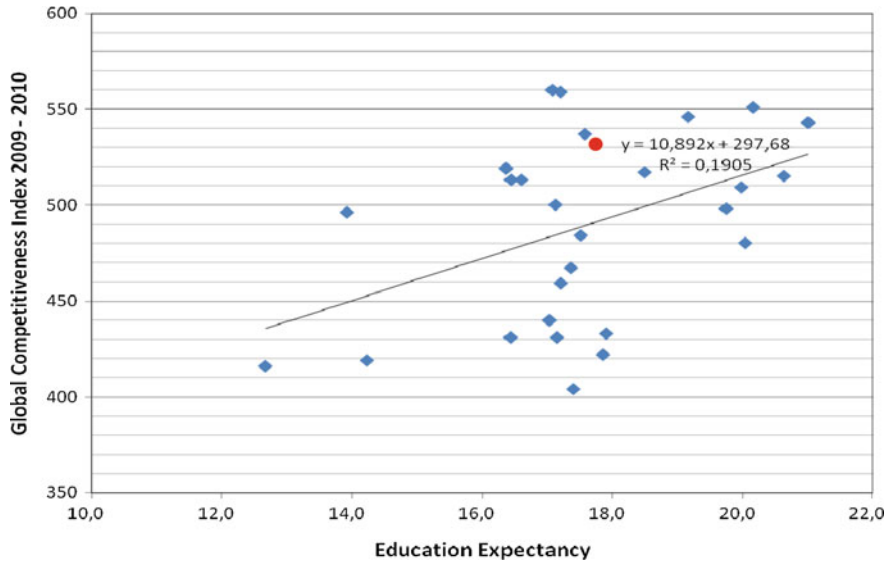


Fig. 5.9 OECD countries by education expectancy (2007) and competitiveness (2009). Source OECD (2009) and World Economic Forum (2009)

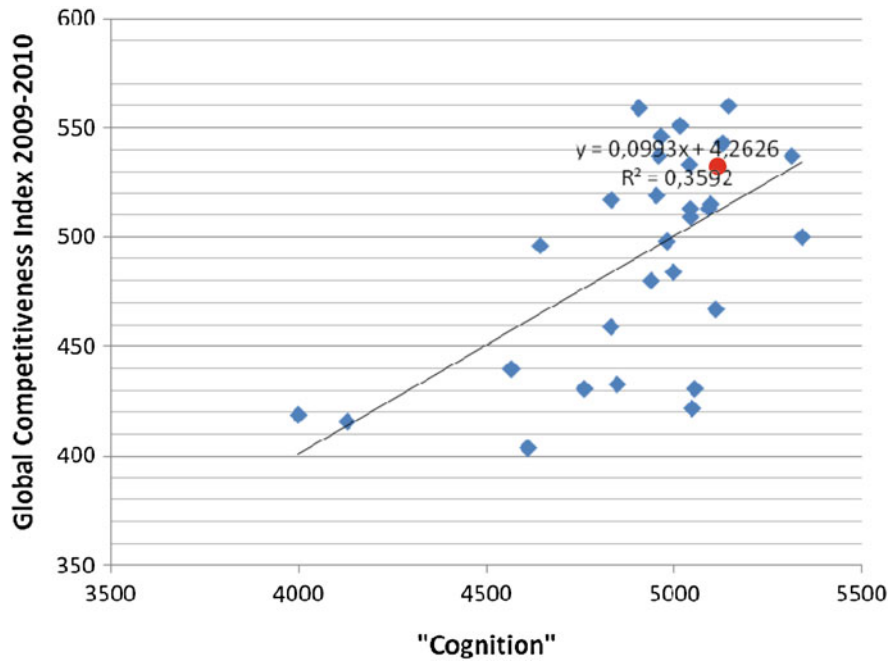


Fig. 5.10 OECD countries by "cognition" and competitiveness (2009). Source Hanushek and Woessmann (2009) and World Economic Forum (2009)

Figures 5.9 and 5.10 together are broadly consistent with what Hanushek and Woessmann found in 2007: both achievement and attainment matter and the former a bit more so than the latter. Of course we cannot say that Figs. 5.9 and 5.10 confirm these findings; for that claim we would need a much more in-depth analysis. But at least at first sight, it does seem to be the case that both attainment and achievement enhance the competitiveness of nations. The two figures give no support to the extreme stance that it is *only* achievement—or *only* attainment—that matters.

Despite all the caution that is needed in the interpretation of Figs. 5.8, 5.9 and 5.10, it is interesting to examine these figures from the viewpoint of one individual country, since it is not only the overall patterns that matters, but also a country's concrete point of departure from where it may be moved up, down or sideways through different policies and strategies.

So in each of the Figs. 5.8, 5.9 and 5.10, the round dot represents the Netherlands. We begin with Fig. 5.10. Here, the round dot would need to move towards the upper-right corner: if the Netherlands would improve on “cognition” (a move to the right-hand side), it has a good chance of achieving greater competitiveness (a move upwards). However, the Netherlands already finds itself in a frontier of high achieving countries. Only Japan and Korea are significantly further to the right, while their approach to boosting achievement cannot be emulated by western countries, for reasons explained above. In fact, if we zoom in on PISA-2006 and focus on mathematics, we see that the Netherlands ranks even higher than it does on the indicator “cognition” (which is partly based on past performance). For mathematics in PISA-2006, the Netherlands has an average score of 531, which is not that far below Finland (548) and Korea (547) and actually above Japan (524). In addition, the Netherlands is the only country that pairs very high student achievement to a high degree of stratification *and* to having a relatively large proportion of students with an immigrant background.¹² This makes the Netherlands' performance in PISA completely unique in the world. It also implies that bringing student achievement to a significantly higher level will be extremely difficult; the country seems close to a ceiling. And given the economic law of diminishing returns, it is highly questionable whether a small further increase in achievement will have a noticeable impact on competitiveness.¹³

Figure 5.9 tells a different story. Here, too, the round dot would need to move towards the upper-right corner to achieve greater competitiveness by boosting education expectancy but there is much greater scope for doing so. Selective as it is, the Netherlands lags about two full years behind a group of leading countries in terms of education expectancy and there is a gap of almost 4 years compared to the

¹² At age 15, 11.3% of all pupils in the Netherlands had an immigrant background in 2006. For PISA-winning Finland this figure is a mere 1.5%. The average for the 27 EU countries is 7.9%.

¹³ Even Hanushek and Woessmann find that the closer a country follows behind the leader (i.e., Finland) the smaller the economic gains that result from closing the gap with the leader (OECD, 2010).

top performing country. Moreover, allowing more students to proceed through education by making education less selective is always easier to accomplish than raising achievement from an already high level.

Figure 5.8, finally, sends the clearest signal: here, the round dot would need to move towards the upper-left corner to enhance competitiveness by reducing selectivity. The impact may be small given the weak correlation, but the Netherlands has by far the longest way to go of all countries. The scope for enhancing competitiveness is enormous.

Given the changeability of even the OECD's position regarding the impact of education on the economy, it would be bold to concretely estimate the distinct impact of increases in attainment and achievement on growth for a given country such as the Netherlands. However, it is possible to provide a very rough indication of the order of magnitude of these distinct impacts. Hanushek and Woessmann (OECD 2010, p. 21) find that a policy intervention that starts in 2010 and produces an improvement of 25 PISA points—i.e., a quarter of a standard deviation—will lead to a 3% higher GDP by 2042. As it happens, this 3% is also the lower bound of the 3 to 6% GDP increase that the OECD has predicted to result from an increase in education expectancy by 1 year of schooling (OECD 2006, p. 152). So this makes achievement and attainment comparable: 1 year of schooling is at least as important—and possibly twice as important—as 25 PISA points. If we look at Fig. 5.9, we see that the extra year of schooling is absolutely feasible in light of other countries' scores. An increase of 25 PISA points, in contrast, seems practically impossible. It would bring the Netherlands 8 points above Finland, 9 points above Korea, and 32 points above Japan (for mathematics in PISA 2006).

Yet, remarkably, the current policy of the Netherlands tends to exacerbate the imbalance between attainment and achievement. Generally, there is much more concern about the quality of education than about the average number of years that students spend in it. Associations of employers and of higher education institutions regularly complain publicly and loudly about the quality of secondary education and in doing so they do not seem to need any evidence to underpin their claims; everybody agrees beforehand. Few citizens or politicians seem aware of the much more worrisome international position that the Netherlands hold in terms of education expectancy.

Recent policy measures that could affect the balance between attainment and achievement have all aimed at enhancing the latter, not the former. For instance, criteria for passing final exams have become more severe in recent years and the same goes for admission requirements for continued study. Recommendations of the Advisory Council for Education (in Dutch: *Onderwijsraad*) invariably go in that direction and the same is the case for advocacy statements by associations of employers and higher education institutions. Repeated warnings by the OECD that the policy of early selection in the Netherlands is hindering the progression of learners through the system have caused the Minister of Education to ask the Advisory Council for Education to investigate the issue. Regrettably, the terms of

reference mentioned just the age of first selection, not the many other characteristics that make the Netherlands education system so selective. For instance, no country in the world refers 60% of the entire age cohort to the lowest track. In its report, the Advisory Council for Education concluded that there was no need to change the age of selection and it only suggested minor policy interventions that should prevent too many students getting stuck in the system (Onderwijsraad 2010).

This chapter has not tabled hard evidence that the policy of high achievement and low attainment is harmful for the economy. But strong indications have been provided. And before continuing this policy it seems worthwhile to investigate the issue further. That investigation should also address the impact of education on social capital; the next and last section touches upon this issue very briefly.

5.10 Selectivity in Education and Its Impact on Social Capital

In addition to assessing countries' educational performance against economic objectives such as growth and competitiveness, it would be desirable to assess their performance against social objectives as well. However, much less work has been done in this respect, which may explain the brevity of this section.

A review of the literature on social capital showed that education is generally seen as the key producer of it (van Ravens 2009, p. 124). The most concise evidence in this regard is perhaps provided by Putnam (2000), who constructed a composite indicator of educational performance and investigated its relation with an index of social capital. Thus, Putnam found strong correlations that persist after controlling for many variables that could confound those correlations. His composite indicator of educational performance contains indicators of attainment (e.g., years of schooling) as well as achievement (e.g., SAT scores), so that it is not possible to distinguish which of the two has the greater impact on social capital.¹⁴ However, it should be possible to disentangle the two and repeat the exercise for both of them separately. Furthermore, working in a USA context, Putnam had no reason to investigate the impact of educational stratification; the whole education system across the United States is equally non-stratified. But once again: repeating his research in an international context—for a set of countries with varying degrees of educational stratification—should be feasible.

In the absence of that analysis, one can only try to imagine what educational stratification does for social capital. What does it mean if two children grow up together but go their separate ways at age 10 or 12, only to meet again when one is

¹⁴ It is speculative, but if education builds social capital by bringing young people and a teacher together in meaningful and intelligent interaction on a regular basis, it may be the case that the production of social capital depends on the amount of time these people interact and perhaps less on the outcomes of their exams.

an employee and the other his boss? Admittedly, in North America and Sweden too, there comes a moment when the age cohort splits up. But if that moment is postponed until age 18 or 19, this means that young people stay together in the most important societal institution—education—throughout a critically important formative period in their lives. This is likely to make a difference.

5.11 Discussion

What strategies can education systems such as the Dutch one pursue to increase enrolment in tertiary education? To be more precise: if an education system is selective and stringent (in the sense that it pairs high achievement levels to relatively low attainment levels) as well as characterised by a strong vocational orientation (implying that employers and other third parties have a strong say in the competencies that school-leavers and graduates must have), then what can be done to make more learners proceed to higher education levels? In essence, there are four possible answers to this question.

The current strategy in the Netherlands is not to compromise on either selectivity or vocational orientation and to seek ways to create pathways—perhaps the word “by-passes” would capture it better—from the vocational tracks in secondary education to the more academic ones. A recent recommendation by the Education Council is, for instance, to resist the call for moving the age of first selection from age 12 to age 15 or 16, and instead, to review once again the streaming of students and seek more possibilities for children that were referred to vocational education at 12 to reach the academic tracks later on, taking for granted that they may spend a few extra years in secondary education.

The second strategy, already mentioned, is systemic reform. By moving the age of first selection from age 12 to a much more common age of 15 or 16 (thus creating a comprehensive continuum throughout primary and lower secondary education), more children retain a better chance for a longer time to reach higher levels of education. While there is nowadays a broad international consensus—supported strongly by, for instance, the OECD—this is not even an issue for discussion in the Netherlands, where a Parliamentary Committee has declared that education reform is generally not desirable.

The third strategy is theoretical unrealistic but deserves mentioning, as it may help to understand the fourth strategy. Selectivity—defined as the combination of high levels of achievement and low levels of attainment—can be mitigated, theoretically, by lowering the exit levels of one sub-system (e.g., secondary education) and lowering the entry levels of the next sub-system (e.g., tertiary education). This enables more students to reach higher levels of attainment. However, this is not politically acceptable. In fact, the Education Council published two consecutive reports on *Enhancing Knowledge in Education* in 2006 and 2007 that argue that the quality of education in the Netherlands is in jeopardy and that quality standards urgently need to be raised at literally all levels of the system. The two

reports do not signal the risk that less students may actually reach higher education if this strategy is pursued.

This leaves us with the fourth strategy: if entry levels in tertiary education cannot be lowered across the board, one could think of making them more flexible. One of the factors that determines exit and entry levels in the Netherlands is uniformity at the tertiary level. While there are two sub-systems—university education and higher vocational education—the diversity within each of the sub-systems is very limited. Courses tend to have the same number of years and credit points; tend to be financed in the same way essentially; have staff working under the same conditions, et cetera. Behind this is a desire of Dutch employers: they seek transparency and demand that, for instance, a graduate from a course in civil engineering from one institution has the same competencies as one from another institution. Driven by this pressure, no institution can allow itself to deviate and position itself at the lower end of the market by opening its doors to less talented students and taking for granted that at the end of the course they may reach a somewhat lower competence level. The American higher education system offers a strong contrast. It incorporates some of world's best institutions, alongside a large number of less excellent colleges and universities and even some that deliberately reach out for the less talented. This explains why tertiary enrolment is high despite a low average level of achievement at secondary level. Without emulating the American system entirely, the Dutch education system could at least make some steps in that direction. It could ease the strong uniformity in exit levels in tertiary education, allowing for more diversity among institutions and hence, opening up the possibility that those who cannot meet the current entry requirements for tertiary education do have access, even if that would be in shorter or less demanding courses that lead to somewhat lower exit levels at the end. This strategy would reduce wastage of talents.

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Chapter 6

Summary and Discussion

Abstract In this final chapter the main results and conclusions of the previous chapters are summarized. The main features of the quality framework are reviewed as are the main conclusions about the quality review of Dutch education. In a final section the issue of improving the quality of education is addressed. Results of research reviews and meta-analysis on educational effectiveness at system, school and classroom level are summarized. At the level of national education systems the degree of stratification of the school structure, evaluation and accountability arrangements and school autonomy are factors that are considered as potential levers for improvement. In other areas, like professional development of teachers and school leadership high expectations are not matched by empirical research results. With regards to the situation in the Netherlands it is recommended to address the issue of selectivity and tackle the problem of the barriers between the different school categories. At the same time the current policy to improve achievement in basic subjects and stimulate an achievement oriented attitude in schools is seen as deserving support.

Keywords Educational effectiveness · Educational improvement · School autonomy · Educational achievement · Educational attainment

6.1 Perspectives on Quality as Demonstrated by Output

In *Chap. 1*, we presented a systems model which can be used as a basic template when defining and quantifying the quality of education. In this model, education is viewed as a ‘production process’ whereby input is transformed into output. The production process itself is designated the ‘process’ or ‘throughput’. The model also takes the educational setting or ‘context’ into account. This context is the basis for various resources required by the production process, but also includes

the ‘clients’ or ‘users’ of the system who impose certain demands in terms of the output. The model establishes various hierarchical levels, including the education system (at national level), the school, the groups or classes within that school and the individual students.

Various interpretations of ‘quality’ can be defined further to the relative importance of certain components within the input–process–output–context model and the specific relationships between those components. If quality is measured solely in terms of output, i.e., student achievement, the result may be classified as ‘productivity’. When we examine the interrelationships between context, input and process with a view to finding the combination which provides the best result, we are concerned with ‘effectiveness’. By incorporating the cost aspect of the inputs and processes, we arrive at the perspective of ‘efficiency’.

Educational equity can be regarded as an analysis of the distribution of inputs, processes and outputs among various subpopulations in education, e.g., disadvantaged students and those from more privileged backgrounds.

A further interpretation of educational quality relies on the degree to which the system is sensitive to impulses from the context, which is termed the ‘adaptive perspective’ or simply ‘responsiveness’. Here, the main concern will be to set objectives which do justice to the expectations of the stakeholders and the requirements education is expected to meet.

Of the five interpretations of educational quality, productivity is the simplest to apply in practice, followed by educational equity. The other three interpretations—effectiveness, efficiency and responsiveness—require a more detailed analysis and are somewhat less easy to understand in day-to-day practice. There is a sixth, particularly widespread interpretation of quality, which is also linked to the input–process–output–context model. It entails assessing the value of the inputs, process and outputs separately and therefore encompasses the productivity perspective. This approach is termed the ‘fragmented’ assessment of educational quality. It means that inputs, processes and outcomes are judged on their own, without linking them to other components. In practice, it can be seen in the assessment of individual teachers’ performance or that of the quality of a school’s organisation by examining whether certain standard procedures are being applied and to judge teaching processes in terms of ‘good practice’.

The first chapter describes a number of additional perspectives, which can be used to express the notion of educational quality.

6.1.1 Quality as Functionality

In educational sociology, the quality of education is established by examining whether it fulfils certain key social functions (Peschar and Wesselingh 1985). These key functions include qualification, selection and allocation. The function of ‘qualification’ refers to the significance of education in equipping students for further education or entry to the employment market. It is linked to the adaptive ability or

‘responsiveness’ of education (in selecting the right objectives) and productivity (the attainment of those objectives). The ‘selection’ function refers to the manner in which students are assigned to the various types of school and the ‘tracks’ within those schools, so that they can gain an appropriate diploma at a level in keeping with their abilities. The selection function is therefore a product of the national educational structures. If we apply a more analytical approach based on the framework presented above, it is part of the *throughput* of the system, defined at the macro-level.

The ‘allocation’ function can be seen as a combination of qualification and selection to establish differentiation in skills and abilities in line with certain social tasks and roles, with a particular focus on servicing the employment market as effectively as possible. In assessing all these functions, both performance and yield indicators play a central part.

To summarise, we can state that the ‘productivity’ of education is of key importance in this approach to the assessment of educational quality. There are also links with adaptive ability (in the sense of selecting the most appropriate goals and objectives) and equity, whereby the critical question is whether systems with numerous selection thresholds result in clustering students from certain ethnic groups in the ‘lower’ school types and tracks.

6.1.2 Organisational Quality

When effectiveness is measured using models drawn from organisational science, such as that proposed by Quinn and Rohrbaugh, a broader combination of process and output criteria is generated than when using an approach which focuses exclusively on the educational process. Models of school effectiveness which are backed up by empirical evidence can be classified as part of the ‘rational goal’ approach. A list of the relevant quality indicators is given in [Chap. 1](#) (Fig. 1.5).

6.1.3 Quality from the Viewpoint of Various Stakeholders

There are various stakeholders in the educational process, each of which is concerned with specific aspects of quality. Here, we examine the preoccupations of parents, the Ministry of Education, the Dutch Inspectorate of Education, and what we term the ‘certification industry’ (quality audits, etc.).

When selecting a school for their children, parents are often influenced by practical and pragmatic considerations such as the proximity of the school to their home. The school’s reputation and the demographic make-up of its student population will also play a part in the decision-making process. In terms of the educational quality of the school, parents may consider its educational vision, pedagogical climate and performance in terms of student achievements. Research has shown that parents’ use of quality indicators, such as those included in the

'quality cards' published by the Inspectorate, is not as widespread as had been expected. It seems reasonable to assume that usage may be influenced, at least in part, by the parents' own educational level.

In the Netherlands, separate quality agendas have been produced for the primary, secondary and vocational education sectors, by the Ministry of Education. The common feature of all is the attention devoted to improving performance in the basic subjects of literacy and numeracy. The new objectives of education are good citizenship and social inclusion, alongside the specific professional competencies demanded by vocational education. Numerical output (the number of students who complete their education and gain a qualification) is also addressed by the quality agendas. The process-related factors which will achieve these aims are mostly in the area of professionalisation, both of the school organisation and individual teaching staff.

The Inspectorate of Education has an important role in establishing the quality of schools. The quality agendas also present further categories of measure intended to leverage quality: assessments, the monitoring of student performance, interim examinations, formal quality management systems, regular staff training ('lifelong learning'), evidence-based innovation and better coordination between (the programmes of) the various types of school. Important characteristics of the Dutch education system, such as its far-reaching school autonomy and the high degree of differentiation in further education, are either celebrated (in the case of autonomy) or go entirely unmentioned (the markedly segmented school structure) by the Quality Agendas. Another feature of the Dutch educational system which attracts relatively little attention is the extensive support structure, with its budget of approximately one billion euros per annum.

The assessment frameworks applied by the Inspectorate of Education are based on three types of indicators: input, process and output. The manner in which the frameworks are applied is very much in keeping with the fragmented approach mentioned above. In other words, the indicators are applied alongside each other rather than in combination. There is no quantitative analysis in which input and process factors are related to performance. At the level of the individual school, such quantitative analyses would not be easy to perform (cf. Bosker and Scheerens 1995). The choice of process indicators by the Dutch Inspectorate has been very much influenced by the results of school effectiveness research, whereby the process indicators have a certain predictive value in terms of output and performance (Scheerens et al. 2005). In the new inspection approach, output indicators—and particularly learning achievement—are decisive factors in identifying the 'weak' schools.

The purpose of standards such as ISO 9001 is to ensure that organisations apply a formal quality management system based on clearly defined, uniform criteria. Organisations must be able to demonstrate that their quality management provisions are entirely in line with the overall set of standard procedures. This is assessed by external auditors who are accredited to certify the organisations they visit.

Quality management systems are based on the premise that all primary processes and the mechanisms they involve are known to their users, whereby close

monitoring of inputs and process will guarantee the desired output. This premise does not hold true for the primary processes within schools and in particular, the educational and learning processes. Using the terminology of educational economists, the ‘production function’ of education remains unknown, although there will be clear ideas about what works in most cases and some empirical evidence to support those ideas. The results of research and meta-analyses of educational effectiveness form the relevant knowledge base. However, casual and uncritical use of this sort of quality management approach in education can lead to an overly bureaucratic ritual of producing extensive descriptions of (largely secondary) processes and features which cannot be directly linked to output.

6.1.4 Alternative Visions of Educational Quality

The *Education for All Global Monitoring Report*, published by UNESCO (2004) and subtitled *The Quality Imperative*, established links between the quality of education and the educational traditions of certain countries. On closer examination, we find that these traditions are based partly on philosophical, psychological and sociological approaches (humanism, behaviourism, critical theory) and partly on pragmatic choices that are informed by specific contextual conditions or the specific type of education in which they are applied (e.g., quality in the indigenous tradition and that in the adult education tradition).

The key dimensions within these alternative visions of quality include the type of educational objectives that form the focus of the system, opinions regarding the most desirable process characteristics of education and learning and principles derived from the theory of learning. To begin with the latter, the constructivists stress the importance of preparation and prior knowledge and that of active learning. When this approach is seen in the context of real-life learning situations, it is clearly a didactic principle which has a place in each of the traditions. This type of education need not be regarded as fully ‘open’ and not pre-structured in every case, although the humanist tradition does indeed apply this interpretation. In the critical tradition and that of indigenous and adult education, establishing a direct link to the students’ daily lives and local situation is more than a didactic principle: it is a goal in itself. It must be asked whether the five traditions actually pursue radically different educational outputs. There are certainly some slight nuances in emphasis. The humanist tradition seeks to develop social skills, while the critical tradition, as the name suggests, seeks to impart a socially critical attitude. At the same time, there is no reason to assume that any one of these alternative traditions (with the possible exception of the indigenous tradition) wishes to ignore the importance of cognitive skills and the basic school subjects. International comparative assessment studies such as TIMSS and PISA have served to further the globalisation of education. Many developing countries have opted to take part in these projects. It would appear that they wish to be judged against the same criteria and standards as the industrialised world.

Overall, the predominant view appears to be that educational quality should be judged by output, in the sense of learning performance, student achievement, attainment, numerical yield and long-term impact. There are, however, certain differences between the various quality perspectives in terms of the emphasis they place on the output indicators, each favouring one particular type of indicator, and in terms of the breadth of knowledge or skills to be pursued. In practice, the emphasis is frequently placed on the basic skills such as language and mathematics, although new areas such as ‘citizenship’ and various generic concepts (such as the *literacy* concept in the PISA study) and work skills are sometimes included. Based on various stakeholder perspectives (e.g., those of parents, certification bodies and inspectorates), attention is sometimes devoted to the input and process aspects of quality as well. When input and process indicators are used in addition to the output indicators, the former are almost always applied in isolation, resulting in the fragmented approach to educational quality described above. Quality assessment based on effectiveness and efficiency is only seen in the form of programme evaluations and background studies further to international assessment programmes. In this type of analysis, there seems to be a growing concern for the aspect of educational *equity*.

6.2 Measuring Quality by Means of Indicators

Chapter 2 of this report includes a comprehensive list of available input, process, output and context indicators. These indicators can be regarded as variables which provide a succinct account of the functioning of the system and which can therefore also be used to arrive at a value assessment. The indicators are categorised using the systems model applied in Chap. 1 to classify the various aspects of educational quality. The output indicators are then subject to further elaboration, whereby a distinction is drawn between ‘achievement outcomes’ (based on students’ learning performance, usually assessed on the basis of test or examination results), ‘attainment outcomes’ (the highest educational level attained) and ‘impact outcomes’ (which relate to the long-term societal gains represented by the achievement and attainment levels). Chapter 1 also examines the significance of process and context indicators, presented at various aggregation levels. The selection of process indicators is based on variables which have been substantiated by means of empirical research into educational effectiveness.

The primary importance of the resulting comprehensive set of educational indicators is as a diagnostic and evaluative instrument. As suggested in Chap. 1, the use of output indicators alone can be extremely useful. However, supplementing them with a selection of input, process and context indicators will serve two additional purposes. First, it enables a more analytical examination to reveal the background and ‘causes’ of certain output patterns. Second, it enables a more dynamic approach, oriented towards school improvement. Insofar as input and process indicators have some clear relationship with performance and other output indicators, they can be used as a focus for improvement processes.

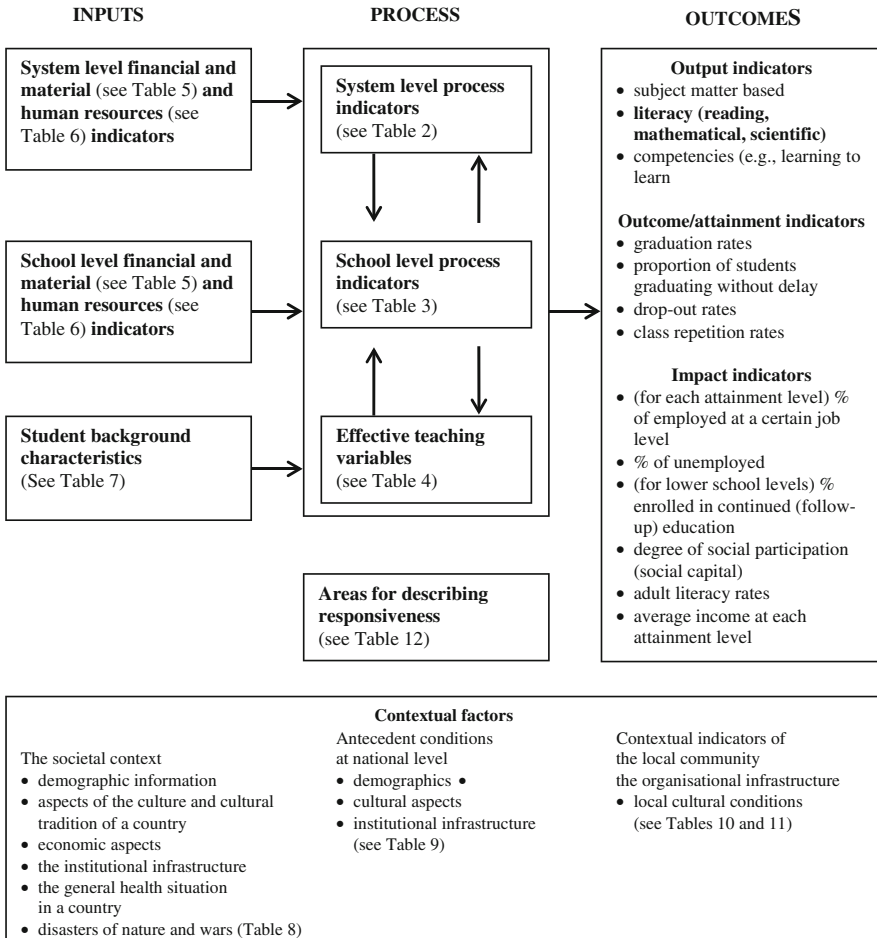


Fig. 6.1 Synthetic overview of educational input, process, outcome and context indicators

For the sake of convenience, the overview of the various education indicators is presented again as Fig. 6.1. References are to the tables and figures in Chap. 2.

6.3 Impressions of the Quality of Education in the Netherlands

‘The quality of [Dutch] education gives some cause for concern’. This is the conclusion of the Dijsselbloem Report (2007), produced by a Parliamentary Commission which had been asked to conduct a review of innovations in education. The Commission summarises its reasons for making this statement in four key points:

- The objective of the restructuring of the educational system, to raise the overall level of education, has not been achieved (other than an improvement in the throughput of the VMBO track).
- A clear decline in language and literacy skills can be seen, particularly in terms of reading ability, as well as in numeracy and mathematics.
- It is inappropriate to attach too much value to the relatively high position that the Netherlands enjoys in international rankings. A reliable conclusion to be drawn from the PISA study is that Dutch students lost ground in reading and numeracy skills during the period from 2003 to 2006.
- No adequate assessment has been made of the development of the educational level in secondary education.
(*Source* Dijsselbloem Report, The Dutch House of Representatives, 2007, here in translation.)

The flaws in these arguments are apparent. If the fourth statement holds true ('there is no adequate picture of the development of the educational level'), how is it possible to state (as the first point does) that the envisaged improvement in the educational level has not been achieved? The international rankings cited refer only to the development in the Netherlands' scores between 2003 and 2006. What significance can be attached to the minor decline noted, given that the Netherlands had consistently achieved very high scores in previous years?

In the current report, which relies in part on the same data used by the Dijsselbloem Commission, we arrive at more positive conclusions.

6.3.1 International Assessments

As noted in [Chap. 4](#), Dutch students consistently achieve scores which are (far) above average in international comparisons. The Netherlands generally fares very well in such studies, certainly compared to other countries in Europe. It occupies a slightly lower position on the global rankings due to the exceptionally high scores of countries such as Japan, Singapore, Korea and Taiwan. In terms of development over time between 1995 and 2006, we are able to draw upon no fewer than fifteen international comparisons, of which only three indicate any statistically significant decline in performance. It is therefore inappropriate to state that there has been any clear decline in student achievement but at the same time, it is equally inappropriate to claim that there has been any marked improvement. The trend is broadly similar for all age groups and in all key subjects. To the extent that some decline in learning performance was noted during the period examined, it applied to both primary and secondary education. Recent criticism of the quality of education (on the part of politicians and the media) is primarily directed against secondary and further education, but at this level no statistically significant decrease in performance was observed (see [Table 3.1](#)). In terms of primary education, most criticism relates to the teaching of numeracy and mathematics. However, the

figures also suggest a slight decline in literacy and reading skills. It is worth noting that Hanushek and Woessmann (2009, Fig. B3), having analysed the trends in cognitive development over a far longer period—1975–2003—conclude that there had been a marked *improvement* in cognitive performance in the Netherlands and that this development had kept pace with that seen in Finland and Canada.

6.3.2 Results of Periodic National Assessments

It is also notable that the indications of a slight decline in learning performance offered by recent international surveys are not backed up by the results of the more detailed national ‘Periodic Assessment of Educational Level’ (PPON) surveys conducted by CITO since 1987. The general conclusion to be drawn from a study of successive PPON reports is that very little has changed in terms of the performance of Grade 6 school pupils over a period of 20 years. The only clear changes can be seen in terms of numeracy and mathematics. Performance in the basic numeracy skills has shown a clear improvement but this is offset by a negative trend in solving ‘processing’ problems. In interpreting these findings, it is appropriate to remember the number of students referred to special (remedial) education has decreased over the years, while the total number of students has increased. This means that those pupils who would have been given special attention in the past are now included in the mainstream classes and this may have a negative effect on the average scores. Since overall performance remained largely consistent, a positive interpretation of the stable performance over time seems to be appropriate.

6.3.3 Inspectorate of Education Reports

The reasonably positive picture of Dutch education offered by the international surveys and CITO studies is further confirmed by the reports of the Inspectorate of Education (e.g., *Onderwijsverslag 2008/2009*). Over 90% of primary and secondary schools inspected were found to be of at least ‘satisfactory’ quality. The percentage of schools for special education which achieve this status is somewhat lower: 78% at primary level and 70% at secondary level). Just over 1% of all schools at both levels were adjudged to be very ‘weak’.

6.3.4 International Comparisons of Educational Attainment

Although the Netherlands is among the world leaders in terms of learning achievement, a different picture emerges in terms of the qualifications earned by students, i.e., ‘educational attainment’ or ‘educational level’.

Data published by the OECD (2009) reveals that the educational level of the Dutch population is slightly higher than the average across all OECD countries. In the 25–64 age group, 73% of Dutch people held (at least) an upper secondary education (HAVO or MBO) diploma in 2007, compared to the OECD average of 70%. Among those aged 25–34, the figure for the Netherlands was 83%, compared to the OECD average of 79%. If we look at the figures for higher education, we see a similar picture: 31% of Dutch people aged 25–64 have a university degree (or equivalent), compared to the OECD average of 28%. Among the 25–35 age group, the Dutch graduate percentage of 37% is again slightly higher than the OECD average of 34%. During the period from 1998 to 2007, the percentage of people aged 25–64 with a tertiary level degree (or equivalent) increased from 24 to 31%, an increase in line with that seen in all OECD countries, from 20 to 27%. These figures therefore confirm that the Netherlands has consistently performed at or slightly above the OECD average in terms of educational *attainment* but has been unable to achieve the leading position it enjoys in terms of learning *achievement*.

6.3.5 Financial Investment in Education

A significant proportion of government expenditure is devoted to education. In 2006, education accounted for 12.0% of the Netherlands' domestic budget (OECD 2009). This is somewhat lower than the OECD average of 13.3%. However, throughout the period 1995–2006, this percentage had increased at a rate higher than the OECD average.

The cost per student at almost all levels was above the OECD average. Only in primary education was the cost per student, at \$6,425, marginally lower than the average of \$6,437. The main component of education expenditure is staffing costs. In the Netherlands, teachers' salaries in both primary and secondary education are higher than the OECD average.

6.3.6 Equity

6.3.6.1 Position of Ethnic Minority Students

The results of the PISA 2006 study reveal that in all three key subject areas examined (general science, literacy and numeracy), students from the ethnic minority communities lag significantly behind their Dutch counterparts. Furthermore, the difference in performance is much greater than the OECD average. It must also be noted that second-generation migrants (who were born in the Netherlands) do not perform significantly better at school than first-generation migrants.

Further analysis of the position of ethnic minority students in the Netherlands reveals that the educational level of this group is showing slow but steady improvement. This is particularly true of the Turkish and Moroccan communities, although their education level still lags behind that of their 'native Dutch' counterparts. The improvement is largely due to the fact that second-generation migrants have been able to complete their entire education in the Netherlands.

The statistics also show a marked increase in Turkish and Moroccan children's attendance at pre-school playgroups over the last 10 years.

Numeracy and literacy skills among ethnic minority students in primary education are showing some improvement, although the gap with Dutch children has not been reduced (because the latter students have also shown improvement). There has been a marked increase in the number of ethnic minority students enrolling for continued (pre-university) education at HAVO and VWO level and in university admissions. In the case of the Turkish and Moroccan communities, enrolments have doubled, while there has also been a significant increase in the number of students with a Surinamese background.

Between 2005 and 2008, the number of early school leavers continued to fall, although the percentage of ethnic minority students opting to 'drop out' remained higher than that of Dutch students.

A persistent cause for concern is the high concentration of ethnic minority students in some schools in the large cities. In approximately 40% of primary schools in Amsterdam and Rotterdam, the percentage of ethnic minority children was higher than 80% during the 2006–2007 school year.

6.3.6.2 The Degree to Which Student Achievement is Determined by Background

Another indicator of equity (or inequity) is the degree to which learning performance is determined by socio-economic status and cultural background. The results of the 2006 PISA study show that the Netherlands scores slightly above the OECD average in this respect and thus, below average in terms of equity. (An above average score indicates a relatively strong influence of background on learning performance; a lower score is therefore better.) Luyten (2008) uses the number of books in the home situation as an indicator of cultural capital and concludes that there is indeed a link between below-average performance in primary education (PIRLS data) and the number of books at home (correlation of .23), while in secondary education (PISA data) the link is even stronger (correlation of .41).

6.3.6.3 Variance in Learning Performance

A third indicator of equity is the variance in learning performance between students at the same school and the variance in average performance of students

between different schools. The PISA data shows that in the Netherlands, the variance in learning performance between students at the same school is relatively small, while that between schools is exceptionally high (at approximately 60%). This is due in part to the extremely segmented structure of secondary education. Equally remarkable, however, is that the variance between schools on the index of socio-economic status is quite low, being slightly below the OECD average. In this respect, the situation in the Netherlands is more favourable than that in several countries with a more comprehensive system.

Inequity in education manifests itself in several ways. While international studies show that inequity and below-average educational achievement can be the result of segmented and stratified education systems (compared to more integrated systems of secondary education), the Netherlands is actually performing reasonably well in this respect, particularly when the degree to which socio-economic status determines learning performance at the individual level is taken into account.

6.4 Selectivity, Educational Levels Achieved, Student Achievement and Economic Resilience

[Chapter 5](#) of this report examines the various ways in which education systems address the needs of the labour market in terms of professional competencies. We see two paradigms, the main difference between them being the (age) level at which differentiation between general or academic education on the one hand and vocational education on the other is applied. There is a geographic region, comprising Germany and a number of its neighbouring countries, in which the education systems devote far greater attention to professional competencies and vocational training than those of other industrialised countries in the West. While primary education remains general in nature, continued and further education is divided into specialist streams or tracks. In the Netherlands, selection takes place from the age of 12, while in Germany and Austria it begins as early as 10 (OECD 2005, p. 405). In some countries, notably those of Scandinavia, a trend can now be seen whereby the existing system of differentiation between academic and vocational tracks, with early selection, is being abandoned in favour of a more general, comprehensive system. The vocational component is introduced only in tertiary education. Clearly, the Dutch system forms part of the ‘vocational’ paradigm.

The degree of vocational focus and ‘selectivity’ can be expressed as an indicator that has three separate components. We term this indicator the ‘stratification index’. Its components are:

- The number of different school types or separate educational programmes available to students aged 15;
- The proportion of 15-year-olds participating in education programmes which offer access to vocational training at a higher level or direct access to the labour market;

- The age at which the first selection is made within the education system.

The first and third component of this composite indicator relate to selectivity, while the second relates to participation in (preparatory) vocational education.

According to data published by OECD (2005), the Netherlands has the highest score on this ‘stratification index’, with Germany in second place. The lowest scores are seen in the Scandinavian countries, the United States, New Zealand and Australia (see Fig. 4.1).

Next, we examined the performance level of countries with a high degree of stratification, such as the Netherlands itself. To do so, we applied two types of outcome indicator as described in Chap. 2: attainment indicators and achievement indicators. As an interim step, we examined how the scores for each type of indicator relate to each other. The application of the indicators to various countries suggests a positive correlation between achievement and attainment. Those countries with a relatively low attainment level but a high performance level are termed ‘selective’: here, students must perform very well in order to climb the ladder of educational levels. Figure 5.7 shows that there is a negative correlation between attainment (here operationalised as the percentage of the population aged between 25 and 64 who have been in higher education) and the stratification index. With a position far above the regression line, the Netherlands has successfully escaped this trend: the number of people who have been in higher education is higher than the high score on the stratification index would suggest. At the same time, it is possible to hypothesise that the limit has now been reached; it will be very difficult to further increase participation in higher education while the stratification index score remains so high.

We also examined the relationship between education outcomes and selectivity on the one hand, and economic growth (‘resilience’ or innovative strength) on the other. The conclusion is that both educational attainment and achievement have a positive influence on economic resilience and both do so to much the same extent.¹ Figure 5.8 shows that there is only a very weak relationship between stratification and competitive strength, although that relationship is negative rather than positive. The figure demonstrates that countries with a markedly stratified education system are somewhat less competitive than those which do not. Once again, however, the Netherlands is some distance above the regression line. Despite achieving the highest score on the stratification index, it remains reasonably competitive. In the international context, the Netherlands fares better in terms of cognitive performance (achievement scores based on PISA data and other sources) than in the educational level achieved (expressed in Fig. 5.5 as ‘educational

¹ While we are concerned with correlations, the use of a causal interpretation, whereby it is assumed that learning performance influences economic growth rather than vice versa, requires a word of explanation. In support of the plausibility of this interpretation, we refer to Hanushek and Woessmann (2009). However, we recommend that this interpretation should be applied with some caution. The knowledge base is narrow, the number of research units very low and it seems likely that there are alternative interpretations, which would support an inverse causal influence (cf. Baumert et al. 2005).

expectancy', i.e., the length of time that a student expects to be in fulltime education). The implication is that an improvement of the educational expectancy is likely to provide better opportunities to strengthen economic resilience than any attempts to further improve cognitive performance. As noted in [Chap. 5](#), 'the Netherlands is the only country which couples high educational performance with a high degree of stratification, and does so with a relatively high proportion of students with an ethnic minority background. This makes the country's achievements in the PISA survey unique in the world. It also implies that any significant improvement in education outcomes will be extremely difficulty to achieve. The Netherlands would already seem to be approaching a ceiling. And in view of the economic law of diminishing returns, it is questionable whether any slight improvement in performance will have any effect on the competitive position'. Performance is therefore so high that the upper limit—the ceiling—is already in view. However, the situation with regard to educational expectancy is different. Due to the high degree of selectivity, the Netherlands is now at least 2 years behind the group of countries which lead the field in terms of educational expectancy, and there is a gap of almost 4 years between the Netherlands and the front runner. Accordingly, there is indeed more economic impact to be achieved by reducing selectivity within the school system than through policy geared towards raising the quality of student achievement in secondary education.

6.5 Improving the Quality of Education

[Chapter 5](#) considers the economic significance of an improvement in educational output, both in the sense of average achievement and the quality of the educational levels attained. The report *The high costs of low educational performance* (OECD 2010) attaches particular value to the improvement of average educational performance on the part of 15-year-olds. Even if this report has overestimated the effects, it is interesting to note that the economic importance of educational output is now being accepted on a broader scale. This trend may well have prompted the recent assessment of the effects of the political parties' programmes in the Netherlands and will have had a part to play in encouraging many of those parties to express greater willingness to increase investment in education and professional training. The burning question is then, *how* can educational achievement and attainment be improved? What measures must be implemented? There have been a few conspicuous successes, such as the reforms in Poland whereby the country made the transition from a segregated secondary education system to a more integrated system. For the most part, however, any improvement in performance has been modest. While the results of well-structured, evidence-based school improvement projects in the United States, the so-called 'Comprehensive School Reforms', are indeed positive, they are of rather modest proportions.

In [Chap. 2](#) of this report, we offer a comprehensive account of the input, process and context indicators which can be influenced by policy measures. Among all these indicators, which are the ‘levers’ from which we may expect the greatest gains?

In answering this question, the framework applied throughout this report—the multi-level system model of educational productivity—provides a sound basis from which to pursue further discussion. Meta-analyses of past educational effectiveness studies (e.g., Wang et al. 1993) suggest that interventions at the micro-level, i.e., as close as possible to the actual learning process of individual students, will have the greatest effect. To achieve an actual improvement in effectiveness, however, it will be necessary to focus on one of the higher levels of aggregation and particularly on the training and professional development of teaching staff. In this context, we may cite Finland as a useful example. School management and leadership is another aspect from which much is expected, although the effects on educational output are extremely limited. The advantage of measures which address the higher management levels is that the quantitative impact, i.e., the number of students and teachers affected, will be very much greater. Recent academic articles addressing effectiveness have devoted attention to policy measures at the macro-level and to structural reforms.

The [Table 6.1](#) below offers an overview of the current state of knowledge with regard to educational effectiveness in the broad sense of the term. The main sources for the table are meta-analyses and international comparative assessments such as PISA and TIMSS. It should be remembered that these studies go beyond the measurement of educational performance alone, considering an increasingly broad range of school, class and system characteristics.

To date, there have been no meta-analyses addressing the level of system factors, although there are some review-type studies available.

Recent studies by Woessmann et al. (2009) and Causa and Chapuis (2009) reveal that early selection has a negative effect on equity, while pre-school education has a positive effect.

The above data, particularly concerning the variables at system level seem to support the conclusions of [Chap. 5](#) with regard to the significance of the level of stratification of the education system. Application of these results in the sense of achieving less stratification would require system reform. There is also strong evidence to support the importance of examinations and assessments in a context in which schools must provide accountability for their performance to external bodies. The results in terms of school autonomy are inconclusive. At the level of the school itself, an orderly climate, adequate learning time for the main components of the curriculum and results orientation are significant factors. The use of evaluation and monitoring can be viewed in combination with, or as an aspect of result orientation.

At the teaching level (i.e., that of the classroom), both structured teaching and strategies based on a more constructivist approach can be seen to give positive results. In terms of policy, this implies that teaching training programmes should

Table 6.1 Overview of educational effectiveness results

<i>System level variables</i>				
Accountability and a well-developed examination system	Cf. Bishop and Woessmann; Scheerens et al. 2007 offer an overview. Mostly positive effects of accountability; discussion about side effects of accountability			
School autonomy	Mixed results of school autonomy, mostly not significant (Scheerens and Maslowski 2008)			
Public versus private schools	No effect of private/public, when school composition is taken into account (Luyten et al. 2005)			
Stratification (tracked versus comprehensive school systems in secondary education)	Mostly negative effect of separate tracks; see Brunello and Checchi (2006) and Jakubowski (2009)			
<i>School level variables</i>				
	Scheerens et al. (2007)	Hattie (2009)	Creemers and Kyriakides (2008)	>50% significance in IAS
Consensus and cohesion	.02	–	.16	X
Orderly climate	.13	.17	.12	X
Monitoring and evaluation	.06	.32	.18	X
Curriculum/OTL	.15	–	.15	X
Homework	.07	.15	–	
Effective learning time	.15	.17	–	
Parental involvement	.09	.25	–	
Achievement orientation	.14	–	–	
Educational leadership	.05	.18	.07	
Differentiation	.02	.09	–	
<i>Teaching level variables</i>				
Time and OTL	.08	.17	.16	X
Classroom management	.10	.26		
Structured teaching	.09	.40	–	X
Teaching learning strategies	.22	.35		
Constructivist teaching	.21	.20		
Classroom climate	.12	.27		
Feedback and monitoring	.07	.33		

Results from recent meta-analyses (coefficients are correlations) with >50% significance in selected international assessment studies (IAS)

Source Scheerens (2009)

present a broad repertoire of different teaching strategies. Good education will then be a combination of effective classroom management and a well-considered choice of strategy and organisation, whereby the ability level of the students must be taken into account. (Weaker students generally benefit from a more structured approach). At the classroom level, the use of evaluation and feedback also has clear potential.

6.5 Concluding Remarks

It is important to note that it is possible to conduct a full and rational discussion about the quality of education, since educational outcomes are measurable. This fact also provides a basis from which to begin the process of improving quality. The mere fact that evaluation and examination take place has motivational and cognitive effects, which are likely to lead to better outcomes.

The Netherlands has reasonably effective means by which to measure educational output (examinations, student monitoring systems, cohort studies and statistics) but is also able to monitor and evaluate input and processes (partly using the same resources and partly based on the work of the Inspectorate of Education). Nevertheless, there is always room for improvement. Further instruments can be added to the arsenal and in this respect, we refer to the recommendations offered by Borghans et al. (2007).

The data cited in this report to illustrate the current quality of primary and secondary education in the Netherlands creates a positive picture of the level of educational achievement. In terms of 'attainment', i.e., the percentage of students who attain a certain level of education, the Netherlands scores only very slightly higher than the OECD average, so that it can be concluded that there is clear room for improvement in this domain of educational outcomes. There is also room for improvement in terms of equity within secondary education, although the Netherlands may be seen to perform reasonably well in this respect compared with those countries which have a similarly high degree of stratification within the education system.

To maintain the current high level of quality and hopefully raise that level further, the following should be borne in mind:

- It would be inappropriate to exclude the possibility of system reform out of hand, particularly in terms of selectivity and the degree of stratification within the Dutch education system.
- The autonomy to be enjoyed by schools and teaching staff should be delineated and defined, whereby opportunities are created for experts to make a structured contribution to improvement programmes. The American 'Comprehensive School Reform' projects provide a useful example.
- The implementation of the Quality Agendas should continue, with further attention for results orientation supported by assessments and performance feedback.
- Critical research and analysis is needed into the effectiveness of public spending on education as far as educational support and the maintenance of an elaborated educational support structure is concerned. The current budget for the educational support structure amounts to almost 1 billion euros per annum but there is no systematic evaluation of effectiveness.

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