

A FRAMEWORK FOR EVALUATING  
EDUCATIONAL OUTCOMES  
IN FINLAND

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NATIONAL BOARD OF EDUCATION

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## Foreword

In recent years evaluation of education has been progressing in all sectors of the education system in Finland. The development activities that have taken place in teaching and education have increased the school maintainers' responsibility for the implementation of schooling in practice. Administrative guidance has been reduced in all sectors of education. By means of evaluation we wish to serve the needs of political and administrative guidance by producing information which is useful and applicable in the development of education.

The local administration and schools produce evaluation data for their own development activities. A concern for the quality of education has prompted most local authorities, other school maintainers and the schools themselves to invest resources in evaluation.

The National Board of Education is the main source of national-level evaluation information on education. For this purpose we have sought to develop an evaluation framework that would yield information as comprehensive and useful as possible for the needs of educational decision-makers and developers. The framework is based on educational indicators, on the evaluation system for educational outcomes and on various evaluation projects, i.e. holistic evaluations of particular forms of education or thematic evaluations in major educational fields.

For the purposes of evaluating educational outcomes we have developed a framework to be used when carrying out these evaluations. To enable evaluation of the outcomes, certain evaluation objects have been defined, dealing with the respective aspects of the effectiveness, efficiency and economy of the educational activities.

The aim of this publication is to describe the evaluation framework, and also depicting the position and practice of evaluation in the field of education. The latter half of this publication contains a concise description of the educational evaluation system in Finland. Although the framework for evaluating educational outcomes has been designed primarily for national-level purposes, it has been successfully used in school-level self-evaluations as well. For this reason, the last chapter addresses school-based self-evaluation and presents a set of stimulus questions, which can be used as a basis when designing a self-evaluation scheme. These notions and suggestions apply equally to comprehensive school, upper secondary school, and to vocational education, for both young people and adults.

Apart from the staff of the National Board of Education, a number of experts from universities and other educational institutes have contributed to the development of the framework for evaluating educational outcomes. Representatives from various schools and educational institutes have tested this framework model in practice and given valuable feedback for the definition of the evaluation objects concerning effectiveness, efficiency and economy. I warmly thank all the teachers, headmasters, chief education officers and students who have participated in the evaluation seminars and practical testing. I would like to extend my special thanks to Associate Professor Airi Hautamäki, Professor Reijo Raivola, Secretary General Kauko Hämäläinen and Professor Pirjo Linnakylä for their contribution to the development project. I am grateful to Docent Vesa Niskanen for writing Chapter 4.2. In the National Board of Education Counsellors Esko Korkeakoski, Anu Räisänen and Pentti Yrjölä have had an important role in the later stages of the framework design. M.Ed. Aulikki Etelälahti has assisted in drafting the report. My thanks to all these people!

The evaluation framework, as well as the data acquisition and processing models are still under further development. All comments on what we have accomplished so far are truly welcome.

Helsinki, June 1998

Ritva Jakku-Sihvonen  
Leader of the Project on the Evaluation Framework

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At the beginning of 1994 a project on the methodological development of the evaluation of educational outcomes (the ARMI project) was conceived in the National Board of Education. The aims of the project were to design evaluation strategies and define fields of emphasis for education, to draw up indicator descriptions and evaluation criteria, as well as to determine the kind of information needed. In the spring of 1994 the Board of the National Board of Education confirmed the strategies and the fields of emphasis to be applied in the evaluation of educational outcomes in 1994 and 1995. In January 1997 the Ministry of Education published a report entitled Strategy for Educational Evaluation (Koulutuksen arviointistrategia).

This report describes the results yielded by the ARMI project in the spring of 1998. The report discusses the meaning of the evaluation of educational outcomes in general as well as the project outlines regarding these activities at the National Board of Education. The current report is largely consistent with the structure and contents of the report published in 1995.

## 1 Introduction

In public administration the underlying value of activities is reflected in legislation and norms. In evaluation this basis is of vital importance. The present administrative culture calls for an active approach to the development of evaluation methodology.

The education system has certain responsibilities, and public funds have been allocated for these purposes. Both political decision-makers and the public are interested in what is accomplished with these funds allocated for education. The decentralisation of public administration and the dissolution of a centralised control system have altered the regulation systems, especially the provision of public welfare services.

In the field of education the transition from the norm-based management to management by information has led to a greater need for evaluation data. Political and administrative decision-making requires more information about educational outcomes, because schools and local authorities now have more freedom to make decisions on their own teaching arrangements and emphases regarding content. When evaluating educational outcomes, the essential task is to produce information that is up-to-date and nationally relevant in terms of educational development at all levels. In the evaluation of educational outcomes, it is no longer

sufficient to know the learning achievements but current information is also required about the schools as **learning** environments and as part of the education system and the surrounding society.

**Evaluation** generally means making an interpretative analysis of the phenomena or the activities being studied, and defining the benefit or value produced by the activities. Such evaluation may focus on any human activities, from the level of individuals to that of organisations. Evaluation typically aims at findings that are as reliable as possible, based on the information available and on the expertise of those involved in the evaluation. When making an analysis, the basis of the evaluation, the information available and the methods used need to be presented. Evaluative statements and conclusions must be founded on quantitative and qualitative criteria. These criteria lay a foundation for evaluating the state of matters: their strengths and weaknesses, benefits and disadvantages. In view of the evaluation practice there are some aspects that deserve special attention: the evaluator's familiarity with the object, as well as his/her ethics and extensive knowledge and understanding of the nature of the human and social effects produced by education. The aim of evaluation is to yield information that would serve the development of the activities studied.

As for educational administration, the historical background of evaluation can be found in the work carried out by inspectors of primary school education. Their work was not only ensuring that the regulations were observed, but also, to a great extent, guiding, counselling and making proposals for improvements. After 1970 inspection became the responsibility of the Departments of Education of the Provincial Governments, and were later renamed as counselling and follow-up activities. In the 1980s the Provincial Governments extended their counselling and follow-up activities to cover the sector of vocational education, and they carried out their work under the State's central administration.

In many administrative branches, the management-oriented evaluation activities derive from the administrative development schemes of the 1970s. In educational administration, the school-based evaluations – whether pure self-assessments or involving external consultants – started to become more common in Finnish schools during the 1980s. At that time the notion of schools' internal development (e.g. the School Improvement Movement) gained ground within schools. Analyses were drafted on the school's strengths and weaknesses, to serve as a basis for various development and consultancy projects. Similar trends in terms

of development and evaluation could be seen in other branches of administration as well. (Jakku-Sihvonen 1997.)

Partly parallel with the school-based evaluation founded on the analysis of strengths and weaknesses, another new element was introduced in the field of education: i.e. management by results. It directed attention towards the results of educational activities and, when making analyses of the circumstances in which these results were achieved, the so-called SWOT analysis became familiar to many. The actual result-makers themselves were allowed to evaluate what would be the best way to do things in order to achieve these results. Besides focusing on the achievement of results, the analyses focused on resources, both material and immaterial. The economic recession and financial cutbacks, however, made many otherwise development-seeking schools and municipalities adhere to rather monetary-based analyses of resources and activities.

In the period before the up-coming economic recession, quality management eventually reached the Finnish education system as well. In quality management, evaluation is essentially targeted at the processes and customer satisfaction, and forms the basis for development activities. In school life people know very well that the quality of activities is crucial in terms of affecting the way things are learnt and what kind of results will be achieved. Terms like **quality assurance**, **quality systems** and **quality manuals** have also become familiar in the field of education. This quality-oriented thinking has been stimulating self-evaluation activities in schools and prepared the ground for analyses of customer satisfaction and for the growth of an evaluation culture in the field of education in general. (Jakku-Sihvonen 1997.)

The new educational legislation which came into force from the beginning of 1999 (e.g. Act on basic education, chapter 5, section 21) defines educational evaluation as follows<sup>1</sup> :

*“The purpose of educational evaluation is to ensure that the intent of this law is manifested in practice and to support the development of education and to improve the conditions for learning. The maintainer of schooling is to evaluate the instruction provided as well as its effectiveness and also to participate in external evaluations of its educational activities, according to what is said in paragraph 3.*

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1) The function of evaluation is also defined similarly elsewhere in educational legislation.

*The National Board of Education, according to the guidelines set by the respective Ministry, takes care of the development of evaluation as well as of the implementation of external evaluations. The Ministry can assign an individual evaluation to be made by some other body than the National Board of Education.*

*The essential outcomes of an evaluation need to be published.”*

According to a report by the Parliamentary Committee on Education (3/1998 – HE 86/1997):

*“Evaluations are to support the continuous development of education to facilitate improved learning, as well as the realisation of the objectives set for schooling and learning by the various sections of legislation. The Parliamentary Committee wishes to underline that evaluation also has an important social and political function in enhancing the realisation of equality among people within the Finnish education system.”*

When developing evaluation, we have sought to examine the education system as widely as possible and first to define the central prerequisites of the activities, the concepts, dimensions, and evaluation object and only then to move on to the indicators reflecting the phenomenon.

The evaluation work done by the National Board of Education is primarily evaluation of educational outcomes, mainly seeking to serve the national-level educational policy-making and the development of education at the national, local and school levels. This work draws on the findings from various evaluation projects focusing on education and conducted by universities or research institutes. It is important that emancipatory evaluation information is also taken into account when drawing conclusions from evaluations.

The education system consists of many different types of schools and educational institutes. The terminology also varies between different educational cultures: the institution where studying takes place can be called a school, an educational institute, or an organisation; and the persons pursuing their studies in such communities are usually referred to as school-children, pupils or students. For simplicity, in this report we will mostly use the English terms *school* and *student* in the generic sense, so that their scope of reference covers the whole education system including both the general and the vocational sector as well as adult education.

## 2 Evaluation of educational outcomes: Background

The division of labour between the state and the local authorities has changed since the times when the State – through legislation and other norms – used to set out the normative framework for municipal actions. Underlying this change, which started in the 1980s, there is a tendency to strengthen municipal autonomy. Although the municipalities have been granted a fairly autonomous status by the Constitution, the actual degree of that autonomy depends on what is prescribed elsewhere in the legislation. The development of the management systems for educational administration has in recent years been based largely on various actions that contribute to the decentralisation of administration and decision-making powers. In Finland the decentralisation of educational administration has mainly aimed at vertical decentralisation, where decision-making power is devolved from the central administration to the local level.

The development has focused both on control by regulations and on control by resources. Now that regulations concerning practical arrangements have been removed, the administrative steps required have been reduced and previously separate funding systems have been integrated, schools and their maintainers can more independently decide on their activities and especially on how they allocate their financial resources. A leading idea in the reformation of educational administration has been that the high quality of public educational services, which is necessary for the equality of citizens, cannot be achieved through strict uniformity, detailed regulations and state control but rather through improving the conditions for operation. In the current setting the achievement of educational objectives is evaluated through a large co-operation network. The new management system highlights the role of evaluation in ensuring the quality of education.

## 2.1 The emphasis placed on evaluating the quality of education

The notion of the school institution as a service provider has gained ground in recent years. Generally, the standard of an individual provider of educational services, or of the whole education system, is determined by its capacity to support the students' personal growth and educational aspirations as well as to prepare them for social and working life. As education is so important for society, the maintainers of educational services are developing ways to improve the various qualities of these services.

For a long time the quality of education has been approached from a narrow perspective, believing that it can be determined by means of measurement. Educational quality has been studied mainly from the cognitive viewpoints concerning the standard, depth and scientific validity of knowledge, and also from the viewpoint of skill transfer. During the last four decades the quality of education has been examined respectively from didactic, (macro)economic, social and sociological, as well as customer and administrative points of view. Currently, the focus is placed on the overall effectiveness of the service provider. Instead of the quality of specific products, attention is now paid to the whole organisation's capacity to produce goods and services of high quality. The interest in educational quality is not a separate or temporary phenomenon but a part of larger macroeconomic trends.

In practice the evaluation of educational quality is largely concerned with educational outcomes. Here, the emphasis lies on the evaluation of the management and the appropriateness of the processes, that is, on their efficiency, whereas in the case of outcomes the focus is on the whole, and above all, on the effects produced by the activities concerned.

The definition of the quality of education is complicated due to the diversity of the services provided as well as the differences between various client groups (students, employers, society in general, etc.) and their conflicting expectations for education. When considering the problem of defining educational quality, we should bear in mind two different dimensions at the same time:

- 1) The systemic level at which we are operating (from the policy-level through the school-level to the level of courses and even to the level of an individual learner). At the national level this means comparisons between education systems, and at the school-level comparisons of learning achievements between schools of similar type.
- 2) The quality of planning is contrasted with the quality of implementation.

Quality is a dynamic concept. The operating environment is constantly changing and due to wider provision the customers' expectations are increasing. Therefore, when looking at quality, we must remember that our perspective on quality is always a relative one, not absolute. Quality can be defined by taking different dimensions into consideration simultaneously, and here the viewpoint is primarily that of the customer, not that of the service provider. Instead of the output, the emphasis lies on the process of service provision itself.

## 2.2 Different approaches to evaluation

Evaluation is always based on some values and intentions. **Humanistic** evaluation accentuates the individual's right to assess his/her own development and to assign meanings to external activities. People are seen as goal-oriented, active, self-motivated individuals who satisfy themselves, lead their own lives and who cultivate their gifts and talents. This positivistic and individualistic view resembles the hermeneutic approach that stresses an understanding of the purposes and intentions of the activities studied.

**Emancipatory** evaluation aims at critical examination of the goals and activities, and even at questioning them in order to bring about changes in the activities evaluated. This approach tends to lean substantially on evaluation research. Here, the evaluator can freely define, according to his/her own premises, the goals, methods and criteria to be used in the research.

**Economically oriented** evaluation aims at enhancing the use of resources or at minimising educational resources needed. While accentuating economical aspects, the aim is to distribute scarce resources as accurately as possible. A narrow economic point of view has been used to justify reorganisation measures. This approach is connected with the kind of evaluation where the stress is solely on **results** and which is targeted at either the surplus value gained during the education or at the post-education benefits. In this approach, evaluation tends to stress the technical rationality of the activities.

When evaluating **educational outcomes**, the essential task is to yield diverse and reliable information about meeting the objectives set for education, at all levels of the education system. The choice between the individual level and the social level also means a choice between two evaluation perspectives, namely the utilitarian and the pluralistic point of view. These differing perspectives can lead to different answers regarding the questions of the function of evaluation and of the evidence from which the evaluative conclusions are drawn. The **utilitarian** evaluation practice stresses the importance of determining the value and benefit from the society's point of view. In this line, evaluation of educational outcomes has top priority for the public authorities. Another starting point in the utilitarian model is that there is consensus on the objectives from which the criteria will then be derived. **Pluralistic** evaluation, in turn, takes into account the concerned parties' interpretations of the objectives. Here, the evaluator's position can be either descriptive or normative.

In **criteria-based** evaluation the quality of activities and their results are compared with jointly agreed criteria. Definition of the evaluation criteria calls for democratic decisions on the national objectives for education and also a shared understanding on how these criteria should be interpreted. While leaning on explicitly stated criteria, the conclusions drawn from educational outcomes can produce significant information for the needs of decision-making and development work, which is taking place at all levels of the education system. The norms and regulations, which are primarily related to the desired state of education, constitute the basis for evaluation criteria. The criteria can also consist of specific professional qualifications, for example, and the employment prospects of the people with these qualifications.

**Relative** evaluation is quite common and useful. For instance, in the field of education most of the various satisfaction ratings are based on relative evaluation. In relative evaluation the different ratings are usually scaled and proportioned against each other, or the evaluators may relate their assessments either to a prior experience of their own or to other prior evaluations available.

One of the most typical applications of relative evaluation is the so-called Gaussian or normal curve, which can be applied, for instance, when dealing with a distribution of views or with some numerical ratings. The normal curve or some of its variations is commonly applied to student assessment either intentionally or unconsciously. The Finnish matriculation examination system has long followed the principle of relative assessment so that the approval baseline is first defined and then the students' performances are rated and ranked on a relative scale.

## 2.3 Forms of implementation

By **external evaluation** we usually mean that the evaluator comes from outside the operations and/or organisations that are to be evaluated.

External evaluation can be carried out totally independent of the activities and organisation (**independent evaluation**), in which case the evaluator must genuinely have a total independence. In the case of educational administration, in practice this means that the evaluator must be financially and administratively independent or unattached, i.e. he/she must come from another branch of administration or from abroad.

An external evaluation can also be implemented by **somebody from the same administrative branch**, providing that he/she is not involved with the management of these activities and is not in charge of them. Nevertheless, the evaluator is required to have some executive power in the evaluation. In such a case, we are talking about an **intra-branch evaluation** carried out by an external evaluator.

In an external evaluation of a school, the purpose of the evaluation has been defined from outside the school. External evaluations within the education system are implemented in such a way that achievement of the objectives for the target activity is evaluated on the basis of predefined criteria. The purpose is to yield information about the state of the school for the needs of decision-making concerning the development of education

at the municipal, regional or national level. The data from external evaluations are needed both for national development schemes and for international comparisons. Evaluation data may also serve as a basis when applying funding based on results, and when granting rewards for good educational quality. Using foreign evaluators in evaluations on national education policies is becoming more common. The National Board of Education is nationally responsible for producing evaluation information for the needs of political decision-making and for international comparisons. From the point of view of schools and municipalities the National Board of Education is an external evaluator.

A characteristic of **self-evaluation** is that decisions on the content and schedule of the evaluation, and sometimes even on the evaluation objects are left to the organisation itself. In this respect self-evaluation may be problematic: the agents themselves are producing evaluation data in the way they themselves see fit. The essential information from self-evaluations is usually published in reports, which are intended for outsiders as well. The results of purely self-initiated self-evaluations are in most cases reserved for internal use only. Self-evaluations also differ from each other in the way they involve external experts (consultants): most often a self-initiated self-evaluation to develop activities is consultant-driven, however, and concentrates specifically on enhancing the management system. A school may evaluate its own activities, goals, conditions, or results so that the evaluation is carried out by the school community or by its individual members. The evaluation process may concern the functioning of the whole school organisation, its operational environment, or teaching and learning. Self-evaluation is expressly evaluation for deeper awareness, where the individual is the evaluator of his/her own functions or of the activities of his/her work community. This way one's own actions become connected with critical thinking and understanding.

**Comparative evaluation** can be evaluation made between organisations. A characteristic of this is that there is an agreement on distinct evaluation objects and that the effort is usually reciprocal. A typical element in this kind of evaluation is that the co-operation partners, e.g. schools or experts of the same branch, are mutually as comparable as possible. One line of this peer evaluation is called **benchmarking evaluation**. There schools, for instance, gather experiences from high-achieving schools and use these experiences in their own development work.

**Auditing** refers to systematic checking or investigation in order to find out how well the practices match the organisation's self-imposed objectives. (It usually includes systematic evaluation of the functioning of quality systems). Auditing is usually performed by an authorised evaluator. The simplest form of such authorisation can be a school's own request to any auditor they find suitable.

In an audit an external party checks, in most cases, the functioning of the evaluation/quality/management system. Here, auditing serves as a support mechanism for systematic quality assurance. As a result the organisation gets a many-sided, evaluation-based systematic view on its own activities and ways of providing services. The organisation can use the evaluation results in attempt to constantly improve the quality of its operations and also to show its clientele how well the organisation functions.

**Certification** refers to a certificate given by an independent evaluator about the quality of operations. Certification is performed by an accredited certifier. The agreements on which the certification justifications are based vary between countries and domains.

**Monitoring** refers to a follow-up or inspection procedure with the intention of finding out how well certain activities match their objectives. Monitoring can be performed by anybody at the school's request, and by any method.

In an evaluation at the school level we can use results from evaluations made at other levels, for instance, as comparative evidence based on national or regional data. Similarly, school-based self-evaluations may also provide information for the evaluation needs of other levels (whether municipal, regional or national).

## 2.4 Types of evaluation

**Reform evaluations** carried out in administration are often one-time projects by nature, and their implementation requires a great deal of independence and critical approach. Such evaluation is targeted at a specific reform carried out in the administration.

**Development-oriented evaluation** most typically takes the form of a comparative evaluation, a situational evaluation, or a thematic evaluation.

Evaluation of educational outcomes concentrates on national and international comparative reviews, on the state of matters reflected by domain and school-type specific evaluations, and on thematic evaluation.

In **comparative evaluation** the main results of the education system are contrasted with national and international data, with changes, or with the objectives set. Good examples of comparative evaluations are the evaluation of the regional changes observed during the last three years in the entrances to working life in the technical sector, and the evaluation of the regional changes in the admissions of matriculated students to further education. A comparative evaluation may also target, for instance, a school's near-term prospects concerning its development and ability to meet the objectives set for it.

**The situational evaluations of the state of education** focus on a particular type of school or on an education sector as a whole, or even on the entire education system. The purpose is to describe, as completely as possible, the activities and learning achievements of the school type being studied, as well as to explain how well the schools fulfil the demands of education, carry out their educational task, and what kind of educational and social significance they have. The overall evaluation of the upper secondary school education exemplifies the evaluations of the state of education.

**Thematic evaluations** are focused on one or several dimensions of educational outcomes or on a certain educational theme, which has become topical. These evaluations concern, for example, progress in internationalisation, the functioning of educational funding systems or the state of education in a particular school subject.

As far as development-oriented evaluation is concerned, the distinction between the types and purposes of evaluation is often blurred. In recent years there has been an increasing trend of focusing more evaluations on education programmes. Most of these evaluations have been designed to employ not only the methods of traditional content evaluation but also to use, more than before, available evidence on customer satisfaction, on the connections between education and working life, and on placement in working life.

In practice, evaluations may well serve several purposes at the same time. For example, in local-level or school-based self-evaluations many types of evaluation are used side by side.

## 2.5 Evaluating educational outcomes in international co-operation

In recent years the international evaluation of education and education systems, and the development of concepts and methods applied, have largely been influenced by the OECD, whose central aim is to produce information for decision-making on education policy in the Member States. The OECD emphasises that its central mission is to produce, as far as possible, objective and comparable information on the education systems and educational outcomes of different countries.

The OECD approach is largely founded on the input-output framework. A set of educational indicators has been designed on the basis of this framework, and by means of them it is possible to evaluate the status and significance of education and to make international comparisons (Centre for Educational Research and Innovation, 1995). The aim is to improve educational quality, effectiveness and equality in the OECD countries. The educational indicators can reveal major strengths and weaknesses in education systems and thus support the planning of education policy. The indicators are usually statistical indices or their derivatives used for the purposes of planning, monitoring and development.

The indicators are intended to display some points of relevance about the state, functions or outcomes of an entire education system or of a part. Only usability, significant for education policy, turns statistical descriptors into indicators. On the other hand, it is the purpose that determines what kind of empirical evidence will be sought for, in order to examine the following:

1. differences and similarities (e.g. to compare costs or learning achievements)
2. profiles (homogeneity of schools, distribution of learning achievements), and
3. relationships (time series, correlations, regressions).

The OECD indicator work has, to a great extent, drawn upon school achievement data compiled by the IEA (International Association for Evaluating Educational Achievement). The activities of these two organisations complement each other: for example, the more research-oriented approach of the IEA may yield a broader and deeper understanding about educational and instructional cultures, about teaching and learning, which sometimes lies beyond the scope of the OECD indicators easiest to measure. On the other hand, especially for a small country, it would be advisable to allocate the available evaluation resources carefully and economically without too much dispersion.

Various OECD projects provide a good example of international evaluation schemes and related problems. Internationally we can compare the structures, costs and results of the education systems in different countries. However, the information gathered for the needs of the OECD is not sufficient, as such, to form a basis for a national evaluation, because it is solely quantitative and the indicators used are not precise and relevant enough to account for national educational arrangements. Then again, the design of indicators and the implementation of cross-national comparisons are impeded by the differences in education systems, educational objectives and cultures among the Member States. Therefore, in addition to international indicators, there is a need for national indicators by means of which the education system and its functioning in each country can be evaluated in greater detail.

At present, the OECD is introducing an evaluation system, which is based on the learning achievements of the 15-year-olds in each member state. This PISA-project is designed to provide comparative data on learning achievements at least in mother tongue, mathematics and science, and these data will eventually be reported in the form of achievement indicators.

The European Union is also contributing to the international development work on educational indicators. This work includes the development of indicators for the processes, objectives and performance. Finland has participated in the EU's evaluation activities since becoming a member. Presently, there is an on-going, pan-European project launched by the Commission for Education and Training, focusing on evaluation practices and on the utilisation of evaluation data. In addition, most European countries are developing their evaluation activities both independently and in co-operation with other EU countries.

The White Paper on Education and Training (1995) by the European Commission is directing, for its part, the evaluation of educational outcomes in the Member States towards the general educational goals presented in the document. Firstly, there is the goal of raising the level of individuals' general knowledge by encouraging them to acquire new knowledge. Bringing education and working life closer to each other on the basis of open interaction is the second goal directing evaluation. Dropping out of education and consequently from working life is considered undesirable and ought to be prevented. Another goal is to promote people's proficiency in three European languages to widen the range of opportunities for their personal and career development. In addition, there is yet another goal that has an impact on the focus of evaluation. According to this goal, investments in education and facilities should be treated equally.

### 3 National evaluation of educational outcomes

Our national evaluation system is founded on the following cornerstones: national education indicators, an evaluation system for learning achievements, and evaluation projects with varying themes.

The evaluation system is an integrated whole consisting of national-level evaluations and local-level self-assessments. The national evaluation system seeks to:

1. support the local/municipal education administration and the development of schools as goal-oriented and open functional units, and
2. to produce and provide varied, up-to-date and reliable information on the operational context, functioning, results and effects of the education system in the central target areas within the national and international frameworks.

The national evaluation system covers the following areas:

- the supply of and demand for education, access to education, and student flows
- the structure and functioning of the whole education system and of its parts
- the relationship between educational quality and resources available
- development trends in education policy and changes in the field of education
- relations between education and the rest of society
- curricula and syllabi
- learning achievements
- evaluations of effectiveness, efficiency and economy, and
- topical areas of emphasis in evaluation.

### 3.1 Central concepts relating to educational outcomes

The evaluation of outcomes is holistic evaluation to find out how well the goals have been reached and how successfully the resources have been used. The evaluation of outcomes is broad-based and seeks to utilise various sources of information as diversely and objectively as possible. When evaluating outcomes, attention is paid to the effectiveness, economy, and efficiency of the activities being studied. To put it simply, effectiveness means that people are doing the right things, while efficiency means that they are doing them in the right way.

Based on the system for evaluating outcomes wielded in state administration in general, the evaluation of educational outcomes has been defined for educational administration as follows:

Education has been **SUCCESSFUL**<sup>2</sup> (i.e. it has produced the desired educational outcomes) when the nationally and internationally set objectives for each organisational form of the education system, for each school or institution and for the learning activities of each individual, have been achieved.

- \* Education is **efficient** when the functioning, flexibility and timing of the education system, educational administration and teaching arrangements are as appropriate as possible and the quality of teaching is high.

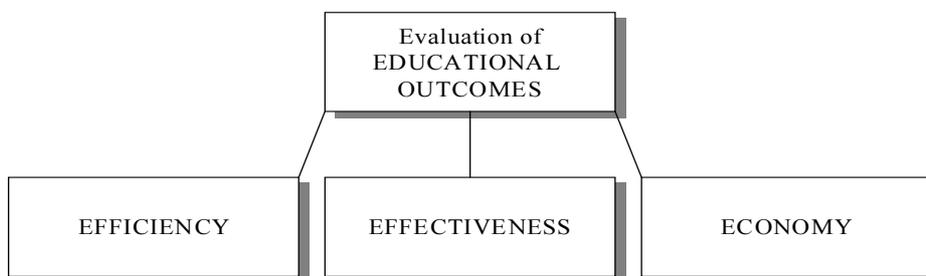


Figure 1. Conceptual model of educational outcomes.

<sup>2</sup> From the viewpoint of economics, the definition of success with regard to educational outcomes can be considered to include the dimension of productivity, which means, e.g., how much work a person gets done in a given time. Related measurements are geared towards physical units: number of employees, work hours, items, kilograms and tons. Productivity can be calculated, for instance, by dividing the number of items produced by the number of work hours spent on this. Indeed, the productivity calculations yield quite different results depending on whether the production figures and required resources are described as monetary units or as physical measures such as kilograms and items. With relation to the dimension of productivity, the National Board of Education favours terms and concepts that are best suited for evaluation of teaching and learning.

- \* Education is **effective** when it succeeds in preparing people, both qualitatively and quantitatively, promoting the mental growth of individuals and the development of society, culture and working life.
- \* Education is **economical** when the resources of education have been allocated in an optimal way with respect to the educational objectives, and the amount of resources is in proportion with the number of educational services provided and appropriate with regard to the structure and organisation of the service provision.

## 3.2 The principles of evaluating educational outcomes

When evaluating educational outcomes, we aim at analyses leading to reliable and concrete conclusions. The National Board of Education has defined its principles in the following way:

**The NBE evaluations of educational outcomes are in essence interpretative analyses concerning the functioning of the education system and the achievement of the objectives set for education, teaching and schooling. Educational outcomes are evaluated through the respective dimensions of efficiency, effectiveness and economy. The evaluation criteria are based on the objectives that the authorities have set for educational activities.**

National-level evaluations of educational outcomes are carried out by a unit with broad and versatile expertise, which is reliable, neutral, autonomous and customer-oriented in its work and also involved in international co-operation. The autonomy of these operations refers to the fact that the work is funded entirely by the State and that the evaluators are independent experts and civil servants.

The principles followed in the evaluation work by the National Board of Education can be summarised as follows:

1. Evaluation is based on education policy decisions seeking to develop the whole education system or some parts of it, including their structure, funding, activities, tasks and objectives.

2. The legitimacy of the evaluation activities is founded on educational legislation, legislation for different types of schools, as well as on state budgets and the contract negotiated between the Ministry of Education and the National Board of Education.
3. Because Finnish society is pluralistic and education policy outlines are sometimes ambiguous, the evaluations demand a lot from the evaluators in terms of their expertise and understanding of the social, national and international contexts they are working in.
4. The information sources, compilation procedures, and analysis methods used in evaluation are to be recorded and justified. The aim is that the information used would be
  - both qualitative and quantitative
  - as reliable, comparable and valid as possible
  - timely
  - compiled from a variety of sources in a systematic fashion
  - economical
  - analysed through methods justified and explored as well as possible.
5. Evaluation should be as transparent as possible, so that the people concerned know about the evaluation, and all parties concerned are informed about the grounds of the evaluation, and also have an opportunity to express their views about the evaluation and its findings.

### 3.3 General description of the evaluation process

Evaluation of educational outcomes is a complicated and delicate process, which starts with collecting and analysing relevant data.

Evaluation can take place by four different approaches, as follows:

1. By describing what has happened and what the state of matters is.
2. By drawing evaluative conclusions from the extent to which the activities have met the objectives set for them.
3. By defining strengths and weaknesses, benefits and disadvantages, and gained value.

4. By describing the desired state of affairs and finding explanations for good and poor results.

In brief, the stages of processing the information on outcomes can be listed as follows:

1. Analysing the activity objectives to form a basis for evaluation.
2. Defining the evaluation objects based on the objective analysis.
3. Defining the criteria and indicators to be used.
4. Gathering the data for (qualitative and quantitative) analyses.
5. Processing and analysing the data.
6. Drawing the evaluative conclusions and reporting them.

In the field of education, there are also many instances that produce evaluation information. The National Board of Education seeks to collect the information from different sources to be used by developers and policy-makers. The chart (Figure 2) on the next page presents the major bodies and organisations that produce evaluation information on education in Finland.

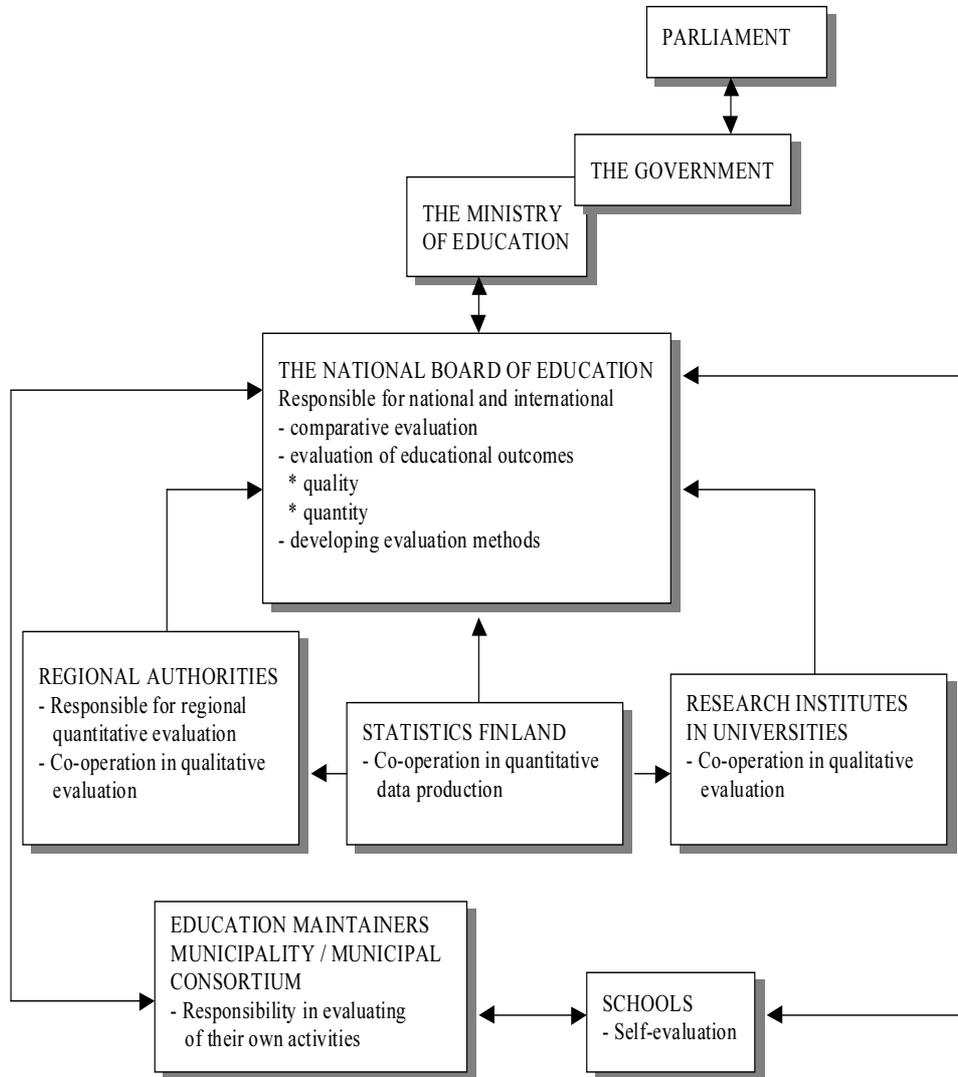


Figure 2. National production of evaluation information to serve policy-making.

### 3.4 Evaluation objects, indicators and criteria

Each evaluation object can be examined by different means: in most cases both qualitative and quantitative information is needed.

There are particular **objects** attributable to each of the evaluation dimensions of educational outcomes. From the multitude of various objects evaluation the most essential ones should be identified, which also best characterise the activities concerned. In the field of education the objects are operational components essential for the implementation of education. Usually these components are also objects for education policy decisions as well as for research and development activities.

The desired state for each object is determined according to the school type or on the basis of the educational sector. If there is a prescribed norm for the object to be evaluated, it provides a primary starting point. Much of evaluation is targeted, however, at points for which the only guidelines may be an administrative view or a tentative developmental direction mentioned in a plan.

Quantitative information can best be obtained through **indicators**, which are monitored on a national basis. For this purpose the National Board of Education together with Statistics Finland are developing shared indicators to help evaluators at the national and local levels. In their own evaluations, schools can employ national and local indicators as well as their own, school-based indicators.

Indicators are based on follow-up information, and they are chiefly used in comparative evaluation. Generally speaking, indicators reflect the object of evaluation, in other words, they can be used when operationalising the evaluation object. Indicators reflect or represent a quality or state of the object, or its change.

In the narrow sense, indicators refer to statistical parameters or indices only. When describing the quality of results or activities the use of statistical parameters as indicators would restrict the acquisition of real and varied information on the object. Explicit quantitative indicators are also hard to choose with regard to the so-called symbolic values, which are closely related to education. As an example of evaluation objects connected to symbolic values the meaningfulness and various qualitative consequences of education could be mentioned.

Especially in conjunction with the qualitative analysis of effectiveness as well as with thematic evaluations, we have to consider whether the term 'indicator' could be used in a broader sense. In the instances when it is impossible to formulate the evaluation information into explicit and measurable indicators, the evaluation objects can be analysed by means of surveys and other methods of data acquisition.

A **criterion** provides the basis on which an evaluative conclusion is drawn. As a criterion presents a crystallised image of the evaluation object, e.g. the achievement level or the state of activities, it offers a means of interpreting how well the objectives have been reached.

When forming the criteria for evaluating educational outcomes, it is necessary to examine legislation, decisions of the Government, recommendations and framework curricula and the degree of specifications that may relate to the object situation. In order to standardise student assessment, the National Board of Education is currently designing criteria for different subjects taught in comprehensive school.

When evaluating the aspects of efficiency and economy, the criteria are also defined on the basis of follow-up data; for instance, by referring to an earlier volume or level of the activities. The essential point, however, is that the evaluation report gives an explicit account of the desired state of matters on which the norms are based.

Using general aims as the basis for the evaluation criteria of educational outcomes may be problematic as well. The various educational user groups may have individual needs and goals, which are difficult to heed in a manner that would satisfy all parties concerned. Evaluators sometimes find themselves in a situation where they must evaluate educational outcomes, even though these parties have not reached unanimity over the priorities between various evaluation criteria. Sometimes an evaluator has to examine the evaluation object from many, perhaps even contradictory standpoints. It is important that the evaluator's premises and starting points are reported openly and carefully, so that the results of the evaluation work can be considered accordingly.

Figure 3 shows the structure of the evaluation concepts in brief. The contents of these concepts are illustrated by a few examples included in the figure. The dimensions of evaluation (efficiency, effectiveness and economy) each comprise their own evaluation objects, which in turn are represented by their specific indicators. The indicators are contrasted

with the desired level or state of activities, that is, with the evaluation criteria. The conclusions drawn, i.e. evaluative statements, account for each of the indicators how well the objectives have been met. In other words, the conclusions drawn from the indicators give a picture about the degree to which the desired state of the object has been reached. All the information gathered through indicators as well as that gained in other ways from each of the dimensions below forms the basis for evaluation of educational outcomes.

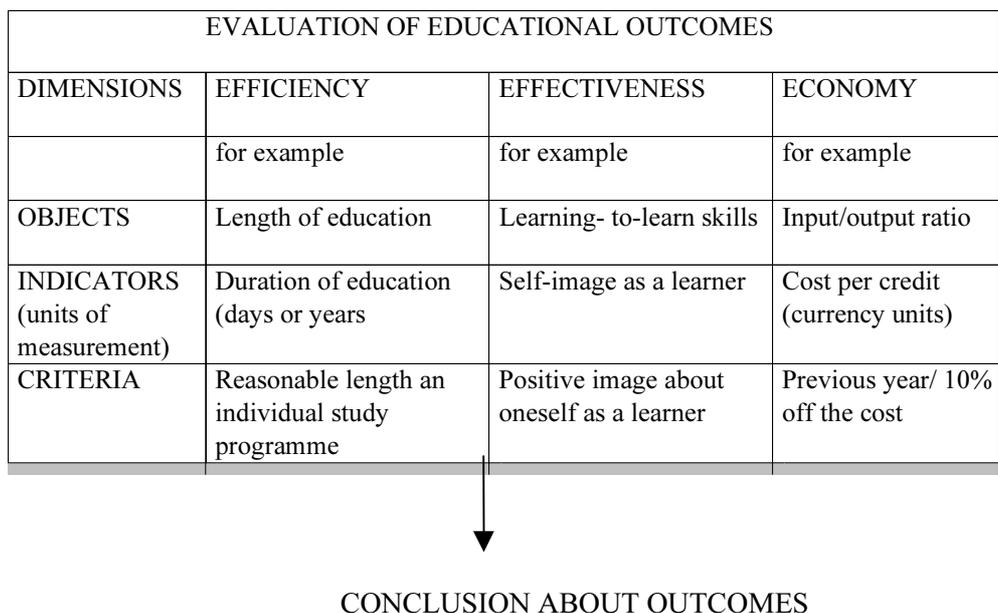


FIGURE 3. The structure of the evaluation concepts, with examples.

Figure 4 summarises the contents of the respective dimensions of efficiency, effectiveness and economy in relation to outcomes.

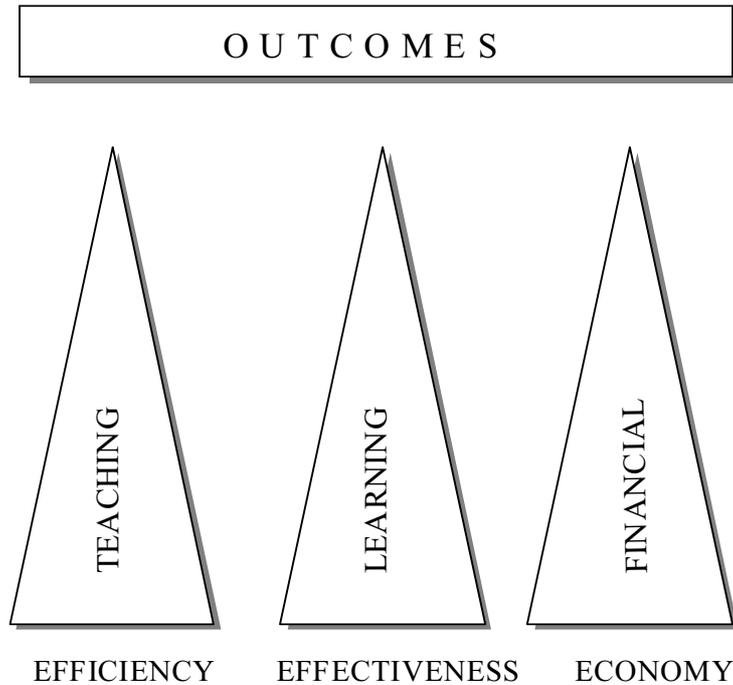


FIGURE 4. A summary of the dimensions of educational outcomes.

In the field of education the evaluational dimensions of outcomes can be outlined so that specific evaluation objects are defined for each of these dimensions. The following chart (Figure 5) shows a condensed outline of the framework designed by the National Board of Education.

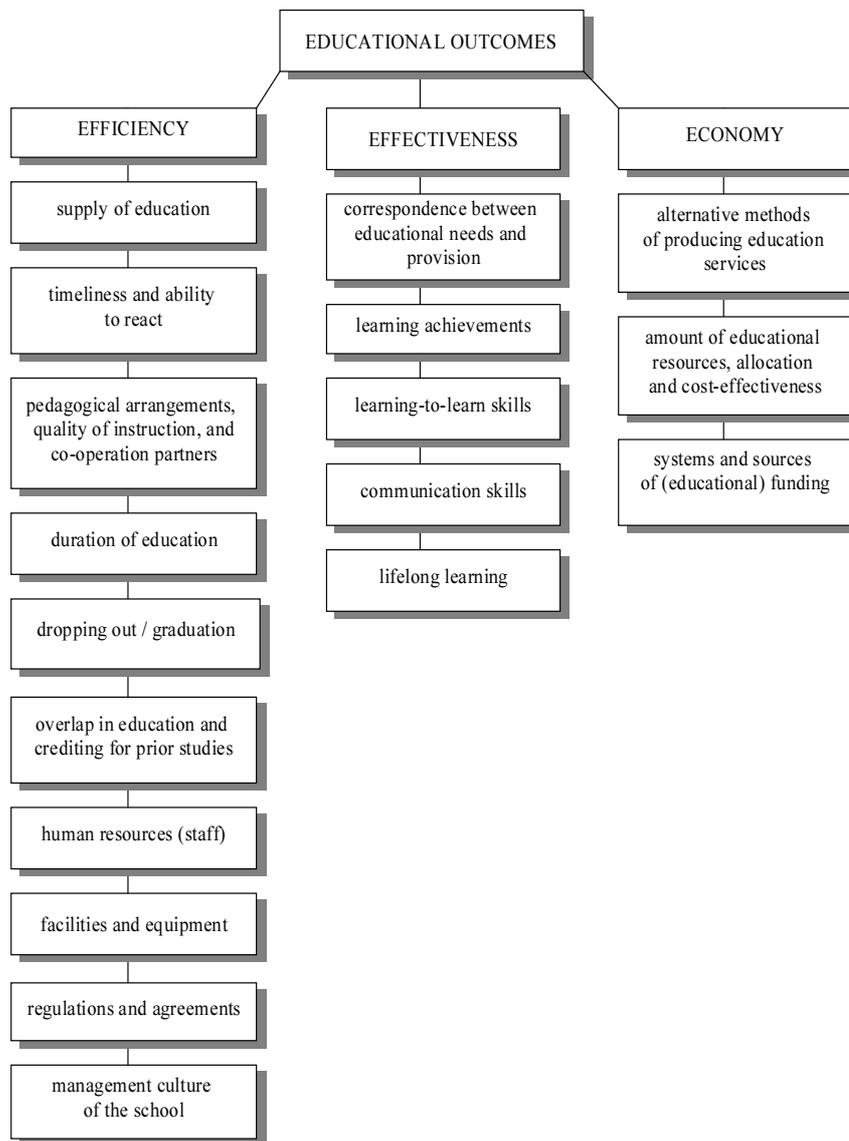


FIGURE 5. A summary of the evaluation objects relative to educational outcomes.

### 3.5 Evaluation objects for efficiency

The evaluation of efficiency yields information about the functioning of the education system and schools as well as about the teaching arrangements. In addition to evaluating the use of resources, efficiency is also evaluated in relation to achievements. In other words, the evaluation is also concerned with whether or not the activities at all levels are such that they enable good learning achievements. The efficiency of the education system and schools is also evaluated from the students' point of view. From a student's viewpoint, education is efficient if he/she can – in reasonable time, through flexible teaching arrangements, and without major travel expenses – obtain the education needed in working life.

The evaluation data regarding efficiency are both quantitative and qualitative. The quantitative data are mainly acquired from statistics. The qualitative evaluation data are collected, for instance, by means of questionnaires, based on a sampling technique.

When evaluating efficiency, the subject should be examined from various angles, and varied evaluation methods should be used. A solution such as dropping out, for instance, which signifies inefficiency from the school's point of view, may actually turn into a sign of efficiency from an individual student's viewpoint, providing that he/she has dropped the studies in order to continue on another study line that better suits his/her interests, or offers better prospects for employment.

The same efficiency indicators can be used to reflect several efficiency-related evaluation objects. Which objects are emphasised depends on the purpose of education and the angle chosen. In many cases evaluation means analysing technical efficiency on the basis of certain indices and ratios.

In efficiency evaluations it is important to pay attention to the functionality, flexibility and timing of the processes being evaluated. A well-functioning process is characterised by good and efficient use of the mental and material resources available. Flexibility refers to the education system's capacity to serve its customers. The customers of education services consist of students, those in working life and society at large. The activities can be described as flexible and timely when the right education is offered in the right place and at the right time to the right people. This also requires prompt and flexible reactions to the changes in educational demand. The duration of education also serves as an indicator for the timeliness of educational activities.

The dimension of efficiency in the field of education can be outlined through the following evaluation objects:

- supply of education
- timeliness and ability to react
- pedagogical arrangements, quality of instruction and co-operation partners
- duration of education
- dropping out / graduation
- overlap in education and crediting for prior studies
- human resources (staff)
- facilities and equipment
- regulations and agreements
- management culture of the school.

### 3.5.1 Supply of education

The supply of education should correspond with the needs of society and working life, as well as with the educational needs of students. Matching the variety of changes taking place in society with those affecting the regulation mechanisms in the field of education is indeed a demanding challenge for all evaluators. At the level of the education system as a whole, supply refers to the supply of entrances, as differentiated by the type of school, by the education sector and by the level of education. At the school level, it refers to the provision of alternative and optional subjects.

As far as comprehensive school is concerned, the focus lies mainly on the school network. Schools should be situated so that the students' journeys to school are not excessively long. As for upper secondary school and general adult education, the supply is contrasted with the demand for education and with individuals' opportunities to receive the education they wish. In vocational education the provision should meet the demands of working life, in other words, the number of entrances should correspond with the demand. Evaluation is complicated by the fact that in many fields the needs of the labour market differ greatly from the educational aspirations of the young.

In addition to the quantity and quality of educational supply, evaluation is focused on the effects that co-operation, networking and competition between schools may produce on the provision of education.

### 3.5.2 Timeliness and ability to react

The education system must be able to anticipate and to respond promptly and flexibly to the changes that take place in society, working life, and people's educational aspirations.

Evaluation is targeted both at the supply of entrances in the different educational sectors and at the contents of the education provided. The contents should match the needs of working life and be based on knowledge that is as up-to-date and reliable as possible. This knowledge should facilitate acquisition of modern and constantly developing skills.

### 3.5.3 Pedagogical arrangements, quality of instruction, and co-operation partners

Evaluation of pedagogical arrangements focuses special attention on the standard of the school's didactic activities. Instruction of good quality is characterised by teaching arrangements that tally with the objectives set for learning. The pedagogical arrangements should reflect the **recognised concept of learning**. Consideration of the students' needs and the specific features of the contents of instruction and their integration lay down the foundation for the evaluation of the didactic activities. Therefore it is necessary to evaluate the meaning of the learning environment, which among other things provides a good indication about the success of the teaching arrangements. When evaluating the quality of instruction, we must consider its value and theory bases as well as the meaning of the learning environment.

In relation to the teaching arrangements, evaluation is focused on the implementation of non-graded studies, individual flexibility and study options as well as on the possibility of using educational services provided by another school. Another consideration is how successful the arrangements are in terms of the evening and day school activities and also in terms of multiform teaching arrangements. In vocational education evaluation is specifically concerned with the appropriateness of the arrangements related to practical training and work experience. It can be evaluated how the ratio between instruction and work experience has been adjusted for different occupations or for different students. Whether or not there is enough teaching given in a foreign language becomes an issue of evaluation when this aspect is connected with the set of educational objectives involved.

Another element to be evaluated in connection with teaching arrangements is the organisation of student advice, which has become increasingly important along with student counselling and individual study programmes. When it comes to the arrangements of special education and remedial instruction, the evaluation criteria derive primarily from the needs of the student. It is important that the students receive special education or remedial instruction that is encouraging, rising from their particular needs, and given at the right time. Also in adult education, it needs to be evaluated whether special support is available as needed; for instance, whether a student suffering from reading and writing disorders can get sufficient support during his/her studies.

The basis of teaching lies on an explicit curriculum. The evaluation of curricular objectives, in turn, is based on more general framework curricula (e.g. those issued by the National Board of Education). To be goal-oriented a teacher's activities need to be based on planning, as well as on objective-related awareness of up-to-date, well-structured and modern concepts of knowledge and learning. Evaluation is focused on finding out how well the school-based curricula implement the framework curricula, and on the way in which the school's own profile is reflected in the objectives.

Curricular evaluation pays attention to the way the instruction encourages the students for activity and diversity in their studies. Another point of interest is how the instruction takes into account the differences and individuality of students (e.g. in terms of learning styles, aptitude, and interests). When the objectives have been set taking the students' learning environments into account, they influence the teaching arrangements and methods used. For one part, the success of a didactic process is reflected in appropriate and varied utilisation of different teaching methods. When evaluating the methodological solutions, attention should be paid to what opportunities they provide for students' various activities, experiences, extensive cognitive processes and development of conceptual thinking, as well as to the extent to which the teaching methods guide the students towards independent learning. In addition, it is also evaluated how well these methods develop the skills and potential for lifelong learning. In adult education, how well the teaching methods take into account the maturity of students can also be evaluated.

Study materials are instrumental with regard to meeting the curricular objectives. They should clarify as many as possible of the target areas mentioned in the curriculum. Study materials should be evaluated from the perspectives of content reliability and being up to date. Other points to be considered include the degree to which the study materials guide towards diversified work processes and independence, and tolerate different values, as well as take into account the students' age level and previous learning. Beside actual study materials, attention should be paid to the other equipment and learning aids the teacher is using. Evaluation is also extended to the functionality of various support services and learning resources such as data networks and libraries.

When evaluating pedagogical activities an important element is student assessment. Student assessments and feedback given by teachers have an essential impact on the formation of a student's leaning style, i.e. on the student's perception of what kind of information is worth seeking and what kind of knowledge is considered valuable.

Evaluation of the learning environment concentrates on finding out how it supports the student's development and ensures physical and psychological security. A good learning environment is goal-oriented, promotes development, and takes advantage of and encourages particular talents of individuals.

In addition, the success of teaching arrangements can be evaluated on the basis of the co-operation activities taking place in schooling and education. The co-operation evaluated is not restricted to that practised with other schools but includes other co-operation partners as well, such as homes and various organisations in working life.

In comprehensive school and partly also in upper secondary education, co-operation between school and home plays a significant role. Therefore it is essential to pay special attention to this aspect as well, when evaluating the efficiency of a school's activities. It is necessary to know how much the homes are aware of the underlying principles, contents and operational culture of the school, and to what extent the parents can get information from the school. By the same token, the parents should have opportunities to be actively in touch with the school, teachers and other members of staff. Especially for students receiving special education, careful evaluation is needed in terms of their parents' possibilities monitoring not only the daily school activities but also the various support services involved.

Likewise, the relations between the school and the homes are important in comprehensive school, the relations between the school and working life and their evaluation are essential in vocational education.

#### 3.5.4 Duration of education

The aim is that, in particular, the students attending upper secondary schools, vocational education, or adult education would have the opportunity to draft individual study plans according to their own interests and general circumstances. From society's point of view, however, it is important that the duration of education remains within reasonable limits. When evaluating the duration of education, individual needs and opportunities to practical work need to be taken into account.

#### 3.5.5 Dropping out / graduation

Leaving school without finishing the studies means under-utilisation of the school's resources. For the society at large, the implications of dropping out are different in different cases: whether the student moves to another school or line of studies, finds employment, or ends up unemployed. It is important that evaluation also investigates the reasons for dropping out.

#### 3.5.6 Overlap in education and crediting for prior studies

In the field of education overlapping, or redundancy, is a problem. Overlap in education signifies inefficiency from the students', schools' and the whole education system's point of view. The education system should function in such a way that overlap could be avoided, i.e. multiple education at the same educational level and also in terms of studying the same contents repeatedly. Educational overlap and crediting systems for prior studies are especially in focus of evaluation in the sectors of vocational and adult education.

### 3.5.7 Human resources (staff)

Evaluations usually address the number of qualified personnel in an organisation. Evaluation of the efficiency of educational activities through the aspect of teachers' professional qualifications or competence, it is based not only on the standard of educational provision but also on the realisation of equal educational opportunities. It is important to find out whether there are any significant differences in teachers' professional competence between different regions of the country, different types of schooling and different fields of education.

In addition to teaching staff's professional competence and formal qualifications, evaluation also deals teacher's further education and in-service training, sabbaticals, co-operation towards the working life and participation in international co-operation schemes.

Beside teachers, the student welfare personnel's role is also important, particularly for evaluations made of the learning environment. Evaluation should also be extended to cover the other school personnel's competence and to its significance for the school's functioning.

### 3.5.8 Facilities and equipment

When a school's facilities and equipment are evaluated, special attention is paid to whether or not they enable versatile use of different teaching methods. The evaluation needs to consider whether the teaching facilities are safe in terms of related transport services, work space and equipment. Evaluation is also focused on shared utilisation of the facilities between different types of schools as well as on the rate at which the school's facilities and equipment are being used throughout the year. In addition there is a need for evaluation of the extent to which the schools facilities allow for individual or small group practice. Evaluation is also directed at library services and telecommunications, for example. The functionality of facilities and equipment must be evaluated from both quantitative and qualitative perspectives.

### 3.5.9 Regulations and agreements

The regulations concerning education set out the framework for the schools' activities. When evaluating the regulations and agreements, attention is paid to whether their intent is to enhance or restrict the school's efficient operation and the freedom of action by the organisations in charge of educational provision.

### 3.5.10 The management culture of the school

The management of a school has a great influence on the working atmosphere, study motivation and learning achievements. When evaluating the management culture, the differences between various types of schools need to be taken into account.

The evaluation of management culture highlights a number of factors affecting the management. These include organisational structures (e.g., the municipal board of education, the school board, parents' associations, student union, etc.); division of labour: the responsibilities and principles of the headmaster or principal, the responsibilities of the teaching staff, as well as responsibility structures for curricular and pedagogical development. The list continues with the division of tasks in internal administration concerning financial matters, maintenance and development of facilities and equipment, personnel management, and particularly, in staff development. It is also very important to evaluate the relations between the school and the surrounding society: what kind of position each school holds in the municipal or regional school network; what kind of relations the school has towards cultural and working life; and how the school's international contacts are being dealt with. The profiles of individual schools should be contrasted with the municipal, regional and national education policy objectives.

As far as pedagogical management is concerned, evaluation emphasises the headmaster's role as a pedagogical leader. Other emphatic aspects include the systematic nature of schooling and school education; the staff's commitment to the school's educational development goals; the teachers' pedagogical co-operation and their self-development as a part of the school's pedagogical activities. Management culture also covers self-assessments by the school and using their results for the development of the school activities.

### 3.6 Evaluation objects for effectiveness

Education is effective when its benefits, both qualitative and quantitative, promote the positive development of the individual and society in terms of culture and working life. From the individual's point of view, education has a positive effect when it supports varied development of personality and promotes self-esteem. Education has both primary and secondary effects. Therefore, in the evaluation of effectiveness the actual effects of education on individuals and society need to be assessed during the education and immediately afterwards. Moreover, it has to be taken into account that the effectiveness of education can be fully seen only after a longer period of time, when evaluation would also be useful.

The most essential objects for the evaluation of effectiveness are the outcomes achieved through education: qualitative and quantitative effects on the individuals and the society. Effectiveness should be evaluated at different levels: at least at the respective levels of the individual, the school, and the provider of education, as well as at those of the economic region, cultural milieu, nation, and international development. When dealing with effectiveness, evaluation focuses on skills required in working life: skills needed in facing and solving problems, skills for co-operation and social interaction, as well as self-awareness and self-respect. Teaching and education also have effects on the development of and respect for the field concerned, and therefore the societal effects of education need to be evaluated from a variety of angles. As far as the primary effects are concerned, the evaluation objects can be drawn from the objectives set for education.

In the evaluation of effectiveness, the focus is especially on the positive or negative effects of education on the object being evaluated. As known, education affects the individual's development and motivation to study, and consequently the qualifications obtained. Furthermore, through individuals, education affects society as well, having implications for its competence level, development of values, and economic growth.

The effectiveness of education can be studied from various angles, depending on the academic discipline. For example, if we study how education affects an individual's life career through the respective views of social psychology, the sociology of education, civil law, or economics, our evaluative conclusions will focus on different things. Depending on the chosen methods of investigation, we will have analyses of different levels concerning the way in which education has affected the individual and his/her surroundings. For the time being, we would need to develop a broad range of different models for the evaluation of education's societal effectiveness.

Effectiveness in the field of education is evaluated by analysing the following aspects:

- What kind of educational demand is there, and how do the available education services, in terms of their objectives, correspond with this demand?
- How do the results achieved correspond with the objectives set for these studies?
- What kind of learning-to-learn skills has the education produced?
- What kind of communication skills has the education produced?
- How has the education affected the students' aspirations for self-development / motivation to learn, i.e. what kind of attitudes towards lifelong learning has the education produced?

In the evaluation of effectiveness, it is necessary to consider both qualitative and quantitative effectiveness.

### 3.6.1 Correspondence between educational demand, qualifications and objectives

In the evaluation of the correspondence between educational demand and educational objectives both the individual level and the community level are considered. When approached from an individual's point of view this process is different from what it would be when adopting the society's point of view.

#### Individual level evaluation

Qualitative evaluation of effectiveness from the individual's point of view is essential, and this kind of evaluation often requires a long-term effort. It would be important to develop evaluation instruments that would help in investigating the supportive role of education for personal development. An individual's needs are dynamic and less perceptible, and therefore their correspondence with explicit and well-defined educational objectives is hard to evaluate. A central goal in educational evaluation is to find out how well the education supports the educational needs of an individual.

When evaluating educational demand at the level of individuals, it is important to take into account the significance which education is given by the people receiving the education. Education may have instrumental value or it can be considered to have some intrinsic value, in which case education means more to an individual than just performances and their evaluation.

Educational evaluation must be sensitive to students' motivation, aptitude, talents and desires. Motivation is a central factor for achieving good learning results. This notion seems to be valid both for general and for vocational education.

In the evaluation concerning the correspondence between an individual's educational needs and the educational objectives, both the instrumental function the person gives to the education and the self-development function are taken into account. Evaluation focuses on the question of whether the goals for the education and for the qualifications gained correspond with the demands an individual sets for his/her personal and career development. On the other hand, it must be evaluated whether the education the person receives is such that it prepares him/her for the kind of further studies or employment he/she wants; for jobs and work tasks that match his/her personal goals and aspirations and provide opportunities for promotion. In addition, it can be evaluated whether the education has enabled the person to develop his/her own field of work. From a broader perspective, the evaluation can be targeted at finding out how the persons generally feel about the opportunities they have to use the skills they have acquired through education.

At the upper stage of comprehensive school, the correspondence between educational needs and objectives shows as the students' opportunity to choose study combinations that match their desires and inclinations. Also, in secondary education, in upper secondary schools and in vocational education, evaluation is targeted at the possibility of choosing education modules relevant to one's personal needs. Other important objects for evaluation include the students' ability to participate in decision-making that concerns themselves and their environment in the field of culture and education, and above all, whether the education has provided the individuals with better opportunities for continuous personal development in society.

#### Community level evaluation

From society's point of view, evaluation of educational needs with respect to the objectives is a complex process. The evaluation needs to take into account what the production system in the society is like, and what kind of development interests prevail. The needs of today should be seen as the challenge for tomorrow. From the viewpoint of an individual field of study, the crucial factor is what sort of educational needs are considered important for working life and cultural development. Forecasting the field-specific needs of working

life calls for a sound analysis of the national and international development in the fields of education and economic life. The society expects education to produce a labour force that is capable of learning, and willing to learn, new skills and knowledge throughout life and to meet the competence requirements of working life. It is essential to find out the effects education has on raising the level of professionalism in the population. Furthermore, cultural development and passing on the cultural heritage to the next generation require support from education. Effective education provides people with skills and knowledge facilitating cultural regeneration and diverse production.

As far as culture is concerned, highly important educational effects relate to the development of creativity and a set of values as well as to attitudes towards internationalisation. Evaluation of these effects is particularly difficult and calls for content analyses on the evaluation objects and for suitable methodology to yield reliable evaluation data.

Evaluation takes into account the correspondence between education and its objectives, both qualitatively and quantitatively. And apart from at the national level, this correspondence should be evaluated regionally as well. Vocational education should be examined as a whole and also on a field-specific basis. When evaluating upper secondary school education, the various curricular emphases and the schools for adult students should be taken into account.

Effectiveness is evaluated from both the qualitative and the quantitative perspective. The quantitative aspect is considered, for instance, when evaluating whether the number of matriculated students is reasonable in proportion to the number of entrances to further education and the needs of the society. The effectiveness of vocational education is monitored through the employment of the graduates, assuming that effective education increases their chances on the labour market. On the other hand, quantitative effectiveness can also be evaluated through the amount of further and in-service training the employers consider necessary for their employees.

Qualitative effectiveness, for its part, is evaluated by investigating the correspondence between educational and cultural needs. Evaluation may also focus on the extent to which the graduates have found employment with tasks corresponding their education, their independence at work, career progress, and their potential for developing the work they are doing. Employers' views regarding the kind and extent of further or in-service education necessary for their employees also provide some information about the effectiveness of the pre-service education concerned.

## Definition of educational objectives

The quantitative objectives for education are defined in education policies, while the qualitative objectives for education and study programmes have been outlined through various regulations. The national framework for vocational education and professional demands provide definitions for educational objectives as well as set out directive guidelines for the activities.

In terms of society's needs and educational objectives, the degree of qualitative effectiveness is reflected in the extent to which the objectives set and defined actually match the needs of modern society. These goals and criteria should express the qualitative educational needs of society.

Evaluation is facilitated by explicit definitions of the goals of education in the national framework documents. The objectives for educational activities are also written down in school-based curricula.

### 3.6.2 Correspondence between learning achievements and educational objectives

Correspondence between educational achievements and objectives can be examined from both the qualitative and the quantitative point of view.

Quantitative effectiveness can be evaluated by finding out whether the number of certificates or diplomas granted (e.g. matriculation examination, vocational diploma) corresponds with the goals set.

The evaluation of qualitative effectiveness can be directed at the correspondence between learning achievements and educational objectives, for instance, with which we also have most experience. The effectiveness of education, whether general or vocational, has been evaluated in many ways. What has usually turned out to be problematic is that evaluation is time-consuming and often directed only at the things that are easiest to measure. Broad-based evaluations of the achievement of educational objectives with regard to supporting the development of personality, for example, have been more infrequent because they are laborious and expensive.

It is essential that educational evaluation, which starts in comprehensive school, pays enough attention to comprehensive evaluation concerning achievement of the objectives. Concentration on the achievement of basic competencies is not enough; evaluation also needs to focus on other elements important for basic education and culture.

In vocational education, the evaluation of the correspondence between learning achievements and educational objectives concentrates on the achievement of basic educational abilities and, on the other hand, on the achievement of professional capabilities.

### 3.6.3 Learning-to-learn skills

Due to the rapid changes in the working environment and in the nature of work, and because knowledge now so quickly becomes obsolete, the cornerstone for success is continuous learning. The modern understanding of learning and the development of skills unanimously supports the notion that learning-to-learn skills play a central role in an individual's development. This notion has also gained emphasis in the new framework curricula.

The approach towards learning-to-learning skills and their evaluation should be future-oriented. We must assess how the plans and objectives take into account learning that takes place after formal education. Education should prepare students for lifelong learning, and this aspect should be evaluated on the basis of their personal needs and goals. Consideration of the diversified needs and goals when evaluating learning-to-learn skills is particularly important in adult education.

The evaluation of learning-to-learn skills seeks to direct attention especially to the core competence, or metacognitive ability, that cannot be achieved through any particular school subject or course as such. Development of learning-to-learn skills is a pedagogical goal common to all school subjects. Evaluation of these aspects concerns all school stages, starting at primary school.

The basis, when evaluating learning-to-learn skills, is the extent to which students succeed in developing skills that enable lifelong learning. Learning-to-learn skills show as an ability to acquire, process and adopt new information. Central evaluation criteria in this respect also comprise the student's self-reliance and self-image as a learner. Study motivation is essential in learning to learn. Also, the capability for independent and self-initiated learning and

problem solving, as well as the ability to evaluate one's own learning and related strategies, contribute to lifelong learning.

In comprehensive school, evaluation should be directed at the student's self-image, study motivation, information processing skills, and self-initiative. In addition to these aspects, in upper secondary schools and in vocational education the learning skills are evaluated by also considering the students' capability for independent learning and problem-solving, as well as their ability to evaluate their own learning and related strategies.

#### 3.6.4 Communication skills

Communication skills make up a very important part of modern education at all school levels. The development of these skills can be monitored in all school subjects. Indeed, with regard to these skills, evaluation should take into account the wide range of different situations and contexts where communication takes place.

In educational evaluation a point of special interest is how instruction improves students' ability to critique information conveyed by different media. In addition, it is important to evaluate what kind of training the instruction provides for exerting influence through different forms of communication.

The evaluation objects for communication skills comprise visual, oral, and written communication skills, interaction, negotiation and co-operation skills as well as the ability to utilise the modern data technologies and telecommunications.

In primary education evaluation should be focused especially on the mastery of the mother tongue and social skills. At the upper stage of comprehensive school evaluation must be expanded to include the skills of oral and written communication in foreign languages, and the utilisation of modern technologies. In vocational education, whether for youth or adults, in addition to the aspects mentioned above, evaluation should also cover the skills of social interaction and negotiation as well as ability to utilise the media and technologies relevant to the professional area.

### 3.6.5 Motivation for lifelong learning

Desire and motivation for personal development is a central object when evaluating the effectiveness of education. In the changing world the students, encouraged by education, need to develop positive attitudes towards learning and its significance. Motivation to learn is governed by various needs and social norms, and by the necessities of life: what do I need and want; how do people generally go about in the world; and how do they succeed in life? Motivation to learn reflects the student's personal aspirations, which direct his/her thinking and behaviour.

Desire for personal development after formal education may become apparent long after leaving formal education. Therefore, longitudinal studies are emphasised in the evaluation concerning desire for personal development.

The evaluation objects for motivation to learn include, apart from the ability to adapt oneself to changes, the desire for continuous personal development. This set of evaluation objects may consist of various orientation patterns that show as different learning styles and strategies. These patterns represent both the motivational aspects as well as the aspects related to learning styles and habits. Motivational aspects may have a central role for learning styles, in which case the learning strategy is seen as a manifestation of the motivation to learn. The desire for personal development shows as the student's eagerness to learn new things and acquire skills that support his/her own development.

In addition, motivation to learn is indicated by the desire for further studies even after graduation. In working life this shows as willingness towards continuing education and in-service training, and also as a desire for the development of one's own work.

## 3.7 Evaluation objects for economy

Education is economical when the educational resources have been allocated optimally in terms of the objectives set for education and when the amount of resources is in proportion to the number of educational services provided and otherwise appropriate with regard to the structure and organisation of the service provision. Because the provision of public services is not linked with the demand in the same way as in the private sector, economy of the activities is also important for efficiency and

effectiveness. Economy is defined as a dimension or domain of successful activities, where a distinction can be made between the respective concepts of **cost-effectiveness** and **efficiency of the production system**. Cost-effectiveness refers to the price paid for the factors of production. The concept of efficiency of the production system connects the evaluation of economy with the way in which the services are provided (technical efficiency, productivity). Service provision is technically most efficient when the given resources are turned into maximal service performance, or correspondingly, when given performance rate is achieved with a minimal use of resources, i.e. no particular resource factor can be further minimised without causing an increase in another. (See e.g. Kirjavainen-Loikkanen 1993.)

When evaluating the dimension of economy, we have to study the functioning of the education system in a framework based on the input-output model. A school can also be regarded as a provide organisation which uses a certain quantity of resources to provide educational services and various support services. (Carnoy 1995.)

Provision of educational services requires human resources (i.e. staff) as well as material and financial resources. When evaluating the economy and cost-effectiveness of the activities in the public sector, the input indicator is generally the expenditure required by the activities, but the use of resources may also be measured by means of other quantitative indicators. To some extent, the expenditures are also supposed to reflect the quality of inputs. The capital costs inflicted by investments must also be included in the production costs of educational services. The monitoring system for the operating costs of education is based on a well-established classification of activities, which is in use in many other countries. In the evaluation of economy it is essential to distinguish the actual costs of educational services from the costs of auxiliary or support activities, such as student welfare services. The consideration of the costs of student welfare services as a separate item is justified by the fact that these expenditures tend to vary greatly according to the type and working environment of the school. Therefore, particularly in school-level comparisons, the structural differences in unit-based production costs must be explained. On the other hand, the significance of the expenditures used on student welfare in the Finnish education system also deserves a special emphasis in conjunction with the evaluation of economy.

Evaluation of economy calls for indicators that are explicit enough, relevant to the activities, and in common to all levels of evaluation.

Furthermore, these indicators must be suitable for measuring, on the one hand, the amount of resources allocated for education, and on the other hand, the volume of educational services provided. For economic evaluation the activities are converted into various input-output ratios. In the public sector it is possible to use simple, ratio-based indicators of efficiency and productivity in service provision. The cost-per-student indicator is generally considered a good indicator of efficiency and productivity at the national level. In addition to cost-related indicators, evaluation of economy may also employ indicators based on other input-output ratios, which describe, besides economy, the structure and efficiency of service production (e.g. hours of instruction per student).

The purpose of the evaluation of economy in education is:

- to monitor the development and allocation of the resources nationally and regionally, by levels and sectors of education, and at the school level;
- to analyse the factors affecting the cost development and cost structure of an education sector or school type;
- to investigate the functioning and effects of the funding system.

The provision and management of educational services have changed drastically in recent years. The dismantling of regulations and shifting from resource-based management to management by results and information have significantly increased the freedom of action by the producers of educational services. Schools can adopt new pedagogical solutions and different action and production models. In this situation the importance of evaluating the economy of the alternative production methods of educational services and the need for monitoring gain emphasis from both the society's and the consumer's point of view.

The allocation of resources can also be evaluated from the viewpoint of equality in society. The funding system of education must be evaluated primarily from the functionality point of view, but the consumers of educational services must not be forgotten either.

Measuring the volume of services produced is problematic in the public sector in general. In the field of education, the outputs can be measured in many ways. A school's outputs or performances consist of the teaching or support services produced, which together make learning possible and yield the actual result. The volume of educational services produced can be measured and evaluated from various angles, e.g. from those listed below:

- the provision point of view; volume measured as teaching hours
- the customer's point of view; enrolment figures as quantity indicators
- amount of service per customer; indicated e.g. as hours or days per student
- end products of the education system; indicated by the number of degrees or diplomas granted, or the number of those completing their education
- the number of study weeks or modules, where the content of the services produced can also be taken into account.

The performance indicators listed above are sufficient for economic evaluation at the national level. As for school-level evaluation, however, we need more detailed indicators both for the actual teaching services and for the support services. When evaluating educational outcomes, it must be noted that as such the quantitative performance indicators, or the indicators describing economy in general, tell little about the quality of the services produced.

As economic indicators can be used directly for various comparative evaluations at the national, regional and school levels, the grounds on which the indicators and evaluation criteria are chosen becomes a crucial issue for interpreting the results. The criteria need to be defined for each set of data observing that

- the content of an indicator is the same for all units being compared, and
- the variation of costs and the main explanatory factors are known.

To be able to make comparisons between units that are different in terms of their service provision, we need to know the reasons for cost variation. These reasons may arise, for example, from the structure of the service provision or from external factors. Furthermore, it has to be decided separately, when general, national evaluation criteria can be used for economic comparisons between individual schools. When examining temporal changes, the requirements for comparability are not as strict, however.

Evaluation of economic aspects consists of the following components:

- economy of the education system and alternative models of production and direction at the national level, e.g. the school network, educational overlap

- allocation, amount, development and cost structure of educational resources nationally, regionally, and by school types or educational fields, with relation to the volume of educational services produced
- efficiency and productivity with regard to the use of resources, and
- functioning of the financing system and sources of funding.

The indicators for economy consist of expenditure figures, input-output ratios as well as of various ratios depicting the cost and finance structures (Figures 6 and 7). The data needed for economic evaluation are collected in conjunction with the expenditure monitoring system. Evaluation information about economy should serve not only national decision-making but also local providers of schooling. For this reason, evaluation information should have direct links to the providers of educational services. This is possible only when the national data system and the accounting and monitoring systems of municipalities and other school providers are compatible enough.

<b>COST INDICATORS</b>					
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	
<b>Indicator / Level of activity</b>	<b>Total costs of the education or the study programme</b>	<b>Cost per student year</b>	<b>Cost per teaching hour</b>	<b>Cost per study week or module</b>	<b>Cost per student hour</b>
<b>Cost of instruction<sup>1</sup></b>					
<b>Indirect education costs: administration, buildings</b>					
<b>Student welfare costs: Food, transportation, accommodation, other welfare services</b>					
<b>Capital costs</b>					
<b>TOTAL COST</b>					

<sup>1)</sup> Direct education costs (teachers' salaries, staff training, purchase costs for study materials, teaching aids, equipment and services, etc)

FIGURE 6



## 4 Production of information about outcomes

The evaluation of educational outcomes is founded on follow-up and research data and expert knowledge as well as on data from international comparisons. Because educational activities take place in schools, school-based data concerning all dimensions of evaluation also play a central role when evaluating the outcomes of the whole education system. The evaluation criteria for educational outcomes are based on decisions and statements issued by public authorities<sup>3</sup>. These authoritative guidelines are used as a basis when making interpretative analyses of the fulfilment of the objectives set for education, the appropriateness of the use of educational resources granted, and of the teaching arrangements. The schools and their maintainers also evaluate the results of their own activities and compare them with respective achievements reached elsewhere, relating them to their own conditions.

Evaluation of educational outcomes means comparing a particular state of affairs, or an evaluation object with the evaluation basis, which consists of the desired state of affairs, i.e. the objectives. Evaluation can also be directed at educational objectives and at the implemented education policy. Evaluation information, which is to serve the needs of planning and decision-making, is produced through various methods considered suitable for the purpose. Apart from the knowledge bound to the official objectives, evaluation also uses other sources of information, mainly evaluation data produced by research.

The phenomenon to be evaluated determines which methods best suit the purpose in each case. Evaluation information may be survey-type information based on quantitative and qualitative follow-up data, such as those concerning the number of students and teachers, etc. From this follow-up information evaluative conclusions are drawn on the basis of certain criteria. The data may also be based on research, where quality requirements for data are high and the reliability of information can be examined through scientific methods. In addition, the information used in evaluation may also be based on expert statements.

The information used in evaluation must be reliable, comparable and updateable. When selecting the evaluation methods, the intended purpose of the evaluation information also needs to be considered. The object of evaluation, then again, determines the evaluation methods to be used. Various methods for collecting information are described below.

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3) The public authorities constitute a chain of decision-making bodies from the national level down to the local level, from Parliament down to the board of an individual school.

## 4.1 Existing sets of evaluation data

### 4.1.1 Statistics, educational indicators and OPTI register

Essential statistics used in evaluation include, for instance, the respective numbers of students, teachers and schools; statistics on applications for and placement in further studies and working life, volume of educational service production, graduation figures, as well as data on expenditure and funding. The statistics from Statistics Finland, the *Vertti* register of the Association of Finnish Local and Regional Authorities, and *OPTI* register maintained by the National Board of Education are important sources of information readily available. Reforms concerning reporting activities with relation to the *OPTI* register were commenced in autumn 1997. From the existing data, new kinds of *ad hoc* reports are compiled, containing time series analyses, for example. New information is also brought into the reports, for instance information relative to the joint application system, graduate placement in the labour market, and population forecasts.

Separate data collection procedures and samples are used when acquiring information for case-specific studies and investigations.

### 4.1.2 Expert assessments and statements

Evaluation of educational outcomes can employ national or international experts, whose reports can be used either as such or with complementary evidence from other sources. Separate statements are often valuable when the evidence is evaluated on a project basis.

### 4.1.3 Research knowledge

Evaluation takes advantage of available scientific knowledge concerning the object.

### 4.1.4 Economic analyses

Economic analyses are used in the evaluation of the usage, development and allocation of educational resources. Possible pre-existing analyses, from both domestic and international sources, are employed in the evaluation.

#### 4.1.5 Data from matriculation, school-leaving and competence-based examinations

The data from the Finnish Matriculation Examination play a central role in national evaluations of upper secondary school education. In addition to the Matriculation Examination, there are other national systems that can be exploited when evaluating the effectiveness of education.

In vocational education for youth, school-leaving examinations are being developed, and the data they are to provide can be used for wider evaluation purposes as well.

Data yielded by various qualification and competence-based examinations within vocational adult education can also contribute to educational evaluation. By means of competence-based examinations people can show their professional skills acquired on an individual basis, and thus get a diploma or certificate without actual formal education to this effect. These competence-based examinations provide evidence for the needs of comparative evaluation. There are also schemes to introduce diploma works or competence-based exams in basic vocational education for youth. The test system of the *National Certificate of Language Proficiency*, for its part, provides data for the evaluation of foreign language competence among adults. As for the formal teaching of foreign languages, the examinations based on the Act on language examinations provide an opportunity for evaluation in this respect.

#### 4.1.6 Test pool

To confirm student assessment in comprehensive school a test pool is being developed. The purpose is that schools could order sets of test items for different school subjects from this pool, in order to define the achievement level of their students more easily.

The item reserve of the test pool will be expanded to comprehensively cover all the theme areas addressed in the national framework curriculum. This accumulative item reserve will, in time, contribute to the evaluation of learning achievements.

## 4.2 Questionnaire data as a source of evaluation information

Evaluation data can be gathered in many ways. One of the most frequently used and most reliable solutions is to employ scientific methodology for data collection.

As far as data collection for evaluations is concerned, questionnaires play an important role. When carrying out surveys by questionnaire, the methodology for collecting and processing data pertinent to the human sciences is employed to a great extent. One way to categorise these methods of the human sciences is to approach the issue through **quantitative** and **qualitative** research.

Quantitative research seeks to gather objective information, it focuses on a strictly specified object, and it uses numerical measurements and numerical (statistical) methods. The conclusions are based on statistical analyses.

Qualitative research assumes a holistic, empirical approach. Moreover, it employs participant observation, semistructured or themed interviews, open-ended interviews, group discussions and autobiographies. The conclusions are usually not based on statistics but expressly on interpretative analyses. Generally speaking, qualitative research consists of gathering observations, their reduction and answering the study questions (“solving the mystery”).

In practical terms, its characteristics can be summarised as follows:

1. It is eclectic, i.e. it seeks to use theories and methods from various scientific fields.
2. The phenomena are observed in their natural contexts and surroundings (e.g. field studies).
3. Research takes place in interaction with the object.
4. Hypotheses are adaptable, i.e. they can be modified during the research.
5. Research may be bound to values.
6. The studies are usually longitudinal.
7. When reporting a qualitative study the aim is to establish an interactive relationship between the text and the reader (“double-hermeneutics”).

The differences between the qualitative and the quantitative approach are illustrated in the table (Figure 8) below.

Aspect	Quantitative	Qualitative
Philosophical background	Logical empiricism	Phenomenology, hermeneutics
Research object	Human behaviour (external)	Human intentional actions
Scientific ideal	Uniform science; same methodology in all disciplines. Measurability.	Understanding. Explanation, Interpretation.
Tasks of science	Description of regularities. Causal explanations.	Consideration and understanding of individual actions.
Knowledge ideal	Objectivity	Conceptual associations. Subjectivity.
Knowledge interest	Technical	Practical, emancipatory.
Methods	Fixed hypotheses. Large, representative samples. Structured questionnaires. Statistical processes. Tests.	Flexible hypotheses. Small, non-representative samples. Semistructured and open-ended interviews.
Type of data	Numerical. Measurable variables. Hard evidence.	Interviews. Personal documentation. Notes and observations. Soft evidence.

FIGURE 8. Quantitative and qualitative approaches.

### 4.3 Analysis of evaluation data and reporting of conclusions

Evaluative conclusions should be as clear and unambiguous as possible. It is these conclusions that summarise the findings of the evaluation. In the analysis of evaluation data it is necessary to bear in mind all the value definitions and explicit stipulations that form the basis of evaluation. These stipulations can be laws, statutes, various norms, rules or other regulations. Of these fundamental stipulations we need to extract and summarise the specific criteria to which the observations about the data will be compared and on the basis of which the activities are considered to:

1. meet the objectives set for them,
2. conflict with the objectives, or
3. to be evidently inadequate, either quantitatively or qualitatively, and therefore failing to meet the objectives.

In the field of education, typically, evaluative analysis should rather be too verbose than too brief, when describing how the evaluator sees the situation at that moment. The evaluator's comments may, to a varying degree, direct the future remedial actions: in some cases, the evidence clearly indicates that there are some obstacles in the way of meeting the objectives, and hence those obstacles need to be identified. In most cases, however, the evident strengths are clearly attributable to certain facts, while the causes for weaknesses remain unexplained. Most importantly, evaluative interpretative analyses should lead to conclusions about the activities' qualitative and quantitative nature, and these conclusions should be so unambiguous that developers and decision-makers can reliably direct their actions to the right objects. This can be achieved either by drafting a specific plan for development activities or by directing an additional investigation to these objects.

The purpose of an evaluation report is to describe the findings as clearly as possible. The nature of the data used in the report determines how the report will be dealt with. The leading principle is that no evaluation report may harm a person's activities, and if weaknesses have been detected in an organisation's functioning, the aim is to give an incentive for remedies and improvements.

When reporting the evaluation studies conducted by the National Board of Education, we follow the principle of publicity, which is pertinent to research in general. The evaluation report is thus a public document. The report contains an analysis based on the evaluation data. Putting the presented conclusions into practice remains the responsibility of the client.

#### 4.4 Reliability of evaluation

In connection with evaluation, the concept of **validity** usually refers to the quality of observations made about the object. Evaluation means defining the value and benefit of activities in an appropriate way. The issue about the validity of evaluation comes up, when considering the conclusions and interpretations in contrast with the evaluation data obtained. Here, it is important to verify that the conclusions have been drawn correctly from the evidence. An essential precondition for the

validity of an evaluative conclusion is that the indicators used point clearly towards the particular conclusion, and no opposite conclusion can be supported with equally strong arguments.

In evaluation 'explaining' means that we seek out causal relationships which lead to the good or poor achievements with regard to the target activity. External validity of evaluation refers mainly to the ability to generalise the claims presented about causality. In the context of evaluation causality should be considered relation to the historical background that affects the present state of the evaluation object. As far as internal validity is concerned it suffices that the causality claims prove reliable just for the particular evaluation object. Internal validity of evaluation does not necessitate that the conclusions are generalisable for other object.

The demands for validity vary according to the relationship that exists between the evaluator and the particular audience of the evaluation in different situations. National evaluations of educational outcomes are intended for an external evaluation audience, i.e. for the public. Here, evaluation is faced with the demands of credibility and normative correctness.

## 5 The institutional range of the NBE evaluations

The legislation concerning education coming into effect on January 1, 1999 consists of the following legislative acts:

1. Act on Basic Education 628/1998
2. Act on the Upper secondary School 629/1998
3. Act on Vocational Education 630/1998
4. Act on Vocational Adult Education 631/1998
5. Act on Liberal Education 632/1998
6. Act on Basic Education of Arts 633/1998
7. Act on the Administration of Private and State Schools 634/1998
8. Act on Funding for Education and Culture 635/1998.

The reformed legislation highlights the significance of evaluation. While stipulations and regulations that prescribe educational arrangements have now been decreased, thus increasing the education providers' freedom when choosing appropriate solutions, it is extremely important to promote the realisation of the intentions of these laws by means of well-organised evaluation. Evaluation supports the continuous development of schooling to further facilitate learning. It also supports implementation of the educational objectives set by the legislation.

The decree issued on the functions of the National Board of Education lists the educational institutions and organisations that lie within the scope of the Board's responsibilities, including evaluation of their educational outcomes. Accordingly, evaluation may concern the following:

- Pre-primary education
- Comprehensive schools
- Upper secondary schools
- Upper secondary schools for adults
- Vocational schools
- Adult education centres
- Folk high schools
- Vocational adult education centres
- Music schools
- Vocational special schools
- Educational institutions for home economics, crafts and industrial arts
- Study centres

- Educational organisations
- Sport institutes
- Vocational teacher education
- Centres for teachers' in-service training
- The vocational education centre of the Sami region
- Apprenticeship training
- Examinations according to the Act on Vocational Qualifications.

The National Board of Education is responsible for carrying out national and international evaluation projects in its own field. The theme areas for the evaluations are defined in a separate evaluation plan. As for their practical implementation, the projects may be organised in co-operation with research institutes and universities in Finland or abroad.

In the practical implementation of the evaluations, we seek to utilise all information that is provided by the educational administration or other administrative branches with regard to the efficiency, economy and effectiveness of education.

## 6 The national evaluation system for education

National or nationwide monitoring and evaluation system is concerned with the achievement of the objectives set by legislation, education policy and framework curricula. Educational authorities are responsible for evaluating the implementation of education policy, for instance, with regard to introducing, carrying out and following up structural reforms. The same applies to the realisation of equal educational opportunities and rights as well. National evaluations pay attention to the sensibility, consistency, significance and controlling effect of national objectives.

The National Board of Education produces evaluation information for national and international purposes. From the national perspective it is important to evaluate, for example, how equal a position citizens have as users of educational services. The evaluation activities by the National Board of Education take advantage of evaluations made at different levels.

Regionally the evaluations may focus, for example, on the service capacity of the school network and on the fulfilment of educational needs and demands.

At the local or municipal level evaluations may be targeted, for example, at the accessibility of education, at the economy of the schools, at the realisation of municipal education policy outlines, and at the performance of the municipality's education structure.

School-based evaluations focus, for instance, on meeting the educational objectives, on the success of the curricula and the pedagogical arrangements, as well as on the appropriateness of the use of resources.

At the student level, evaluation questions of special interest include achievement of personal goals as well as the accessibility aspects of teaching arrangements and educational services.

Research institutes participate, according to the Ministry's directions, in the production of evaluative research data and in co-operation with administration take care of various evaluation tasks related to international projects.

The intention is that the same concepts and approaches are used at the different levels of the education system. Figure 9 summarises evaluation tasks and objects for the different levels.

WHO?	WHAT?	WHY?	HOW?
THE NATIONAL BOARD/ THE MINISTRY OF EDUCATION	<ul style="list-style-type: none"> <li>- effectiveness, efficiency and economy of education</li> <li>- development policy trends and developments in the field of education</li> <li>- topical theme areas</li> <li>- situational analyses from the international perspective</li> <li>- the relationship between education and the rest of society</li> </ul>	<ul style="list-style-type: none"> <li>- realisation of education policy</li> <li>- realisation of curricula</li> <li>- information about the national level of skills and knowledge</li> <li>- follow-up of reforms</li> <li>- awareness of development needs</li> <li>- raising the standard of education</li> <li>- awareness of public opinions relative to education</li> </ul>	<ul style="list-style-type: none"> <li>- evaluation studies and projects</li> <li>- situational descriptions, comparative and thematic evaluations</li> <li>- statistics and indicators</li> <li>- sample-based national tests</li> <li>- international comparisons</li> <li>- expert statements</li> <li>- monitoring of people's choices</li> <li>- meta-evaluations</li> <li>- Gallup polls (educational barometers)</li> </ul>
REGIONAL LEVEL	<ul style="list-style-type: none"> <li>- educational supply and demand in the region</li> <li>- functionality of the school network in the region</li> </ul>	<ul style="list-style-type: none"> <li>- meeting the educational and developmental needs in the region</li> <li>- national needs</li> </ul>	<ul style="list-style-type: none"> <li>- surveys and comparisons</li> <li>- reports</li> <li>- monitoring</li> </ul>
MAINTAINER OF EDUCATION/ MUNICIPALITY	<ul style="list-style-type: none"> <li>- efficiency, effectiveness and economy of local educational services</li> </ul>	<ul style="list-style-type: none"> <li>- municipal needs</li> <li>- regional needs</li> </ul>	<ul style="list-style-type: none"> <li>- participation in external evaluation</li> <li>- self-evaluation</li> <li>- surveys and comparisons</li> <li>- reports</li> <li>- monitoring</li> </ul>
SCHOOL/COLLEGE	<ul style="list-style-type: none"> <li>- outcomes of the activities</li> <li>- functionality of school-based curricula</li> <li>- the school's operational basis and profile</li> <li>- learning achievements (bearing the school's special features in mind)</li> <li>- the management culture and work</li> </ul>	<ul style="list-style-type: none"> <li>- comparison of achievements and activities with respect to time, the school's own goals and similar schools</li> <li>- awareness of developmental needs</li> <li>- development of activities</li> <li>- follow-up of reforms</li> <li>- local and regional needs</li> </ul>	<ul style="list-style-type: none"> <li>- self-evaluation</li> <li>- participation in external evaluation</li> <li>- comparisons of learning achievements</li> <li>- external audit, benchmarking</li> <li>- development discussions</li> <li>- questionnaires</li> </ul>

FIGURE 9. The system of educational evaluation.

Evaluation is founded on the following cornerstones: national indicators, the system for assessing learning achievements and thematic projects.

## 6.1 National education indicators

As a national system, the educational indicator scheme, which is now being developed, will be available to everybody within the field of education and it will contribute to nationally and locally effective monitoring of education, and provide comparable and immediate information on the functional capacity of the education system.

The national indicators will be designed so that they will also yield information about long-term educational trends. There will be two kinds of indicators: annual indicators, which are fewer in number and which are intended to deal with the essential, continuous numerical follow-up information concerning educational outcomes. This information will be reported so that it enables evaluation of educational development trends by means of the most central indicators. Periodically, every few years or so, there will be a more thorough survey of the state of education, for which a large base of information will be gathered through so-called periodic indicators on the different aspects of educational outcomes.

On the basis of these indicators the National Board of Education will prepare periodical evaluation reports for each school type. These reports are intended to serve the Ministry of Education as well as the maintainers of educational organisations. On the basis of the periodic indicators, an overview report about the state of education will be published at regular intervals, including comprehensive evaluative analyses. Educational indicators enable comparisons across various groups of people, between the sexes, and across different regions.

When designing the indicators, the indicator-based information production required by international co-operation is also taken into account.

Indicator work is a joint responsibility of the Ministry of Education, the National Board of Education and Statistics Finland.

## 6.2 Evaluation system for learning achievements

In educational administration we have taken into use an evaluation system for learning achievements, which covers comprehensive school and vocational education. This evaluation system for learning achievements comprises the development (including piloting) of school tests, their administration, as well as making analyses of the results and drawing the conclusions.

The purpose of this national evaluation system is to yield information about the quality of learning achievements. The evaluation findings are used in the development work concerning the education system and framework curricula as well as in practical teaching work. The findings also help in monitoring the implementation of equal educational opportunities.

National evaluations take place at the same time in all schools in the sample. The National Board of Education is responsible for the implementation of these evaluations and also for publishing their findings. The findings are reported in a manner that allows for comparisons on how well the objectives have been met when considered by region, various subgroups, and sex.

Evaluation of learning achievements is typically performance evaluation. It means considering how successful education has been in terms of meeting the objectives set for it. Evaluation of learning achievements can be diagnostic, formative, summative or prognostic.

At the school-leaving stage evaluation is usually summative and its purpose is, above all, to show what has been learnt over the term during the education. Summative evaluation aims, as the term suggests, to sum up previous learning, and this is carried out by means of tests designed specifically for this purpose. The test items are varied in terms of their contents and level of difficulty.

Assessment can be either criterion-based or relative. Traditionally, school achievement tests and large-scale international comparative studies have mainly been of the criterion-based type. In this type of evaluation, characteristically, there are predefined content-wise criteria for acceptable performance. For comprehensive school there is an evaluation system that produces criterion-based information for national needs. Such a system enables an important control task concerning equal educational

opportunities: Whether or not the students have achieved the same basic competencies of general education regardless of their place of residence, sex, and home background, for example.

Assessment of learning achievements is central to evaluating the effectiveness of schooling and education. In evaluation, learning achievements should be considered in a broad perspective so that, besides subject-specific competencies, learning-to-learn skills, the communication skills and study motivation, as well as professional competence in the vocational sector, will be in the focus of evaluation. The learning-to-learn skills include not only the skills of literacy and numeracy but also problem-solving, the student's self-image as a learner, self-esteem and various study orientations. With respect to communication skills, evaluation concerns various aspects of interaction, teamwork and the ability to utilise modern technologies. Study motivation is evaluated from various angles so that at the secondary level and in adult education evaluation also includes comments on students' aspiration to develop themselves. In all, assessment of learning achievements is an important area of evaluation, constituting an essential part not only evaluation of educational effectiveness at the national level, but also in international and school-based evaluations of educational outcomes. When evaluating comprehensive school, upper secondary school or vocational education, we need different kinds of evaluation methods, which can vary accordingly.

The evaluation system for learning achievements is designed to operate in such a way that the achievements will provide regular feedback data on the success of education in terms of meeting the objectives set in the framework curricula. The evaluation system for learning achievements will be established for comprehensive school and for upper secondary education. As for upper secondary school, there is already a functional system in the form of the Matriculation Examination, which should be maintained as a central part of the evaluation system.

The evaluation system for learning achievements will be based on co-operation between the National Board of Education and universities, research institutes and other organisations in this field. The National Board of Education is in charge of the themes, time frames and set-up of the evaluations as well as of publishing the reports.

Finland participates, when necessary, in international comparative evaluations either within the Nordic countries, the European Union, or within the OECD. We will take part in other international, large-scale evaluations as well according to the Ministry's decisions.

Educational evaluations need to be documented and reported. All reporting should seek to contribute to the development of education. The National Board of Education is responsible for publishing the evaluation information and for bringing the information to the Ministry's and other decision-makers' attention.

In the reports on learning achievements the data are presented in such a form that individual persons or schools cannot be identified.

### 6.2.1 Evaluations in comprehensive school

In comprehensive school the purpose of national evaluations is primarily to check that students' achievements in terms of skills and knowledge correspond with the objectives set in the framework curricula. Evaluation is therefore focused on the central contents of different school subjects and on the central aims of school education: learning-to-learn, motivation to learn, and communicative competence.

In comprehensive school, learning achievements are evaluated for national purposes on a regular basis and using sufficiently large samples. A school that becomes selected in the sample may, for justifiable reasons, refuse to participate in the tests. The exemption is granted by the National Board of Education.

In the lowest year grades of comprehensive school the prime objects for evaluation consist of the development of learning-to-learn skills in the broad sense, motivation to learn, and broad-based development of communication skills. Subject-specific and cross-disciplinary evaluations are made as necessary.

In the upper grades of comprehensive school, apart from evaluating the learning-to-learn skills, study motivation and communication skills, there are national evaluations on both subject-specific and on cross-disciplinary issues.

In the final grade of comprehensive school there are regular evaluations in mother tongue and mathematics, in order to check that the objectives of the framework curricula are met. Similar evaluations, by means of subject-specific or cross-disciplinary tests, are made in other subjects as well, but more varyingly. Testing is scheduled so that periodic or non-graded teaching arrangements will not affect the evaluations.

### 6.2.2 Evaluations in upper secondary school

As far as upper secondary school is concerned, the needs of nationwide evaluation are mainly fulfilled by the system of the Matriculation Examination, which operates under the present regulations. With further development the examination will become even more useful as a source of nationwide evaluation information. In order to enable more comprehensive analyses of the results of the Matriculation Examination, there will be enhancements relative to the collection of data concerning the candidates and their learning environments. These evaluative analyses will be employed in the evaluation of educational outcomes.

In the upper secondary schools evaluation information can also be produced through specific projects. Evaluation information related to learning-to-learn skills, communication skills, and motivation for further studies, is produced both for national and international purposes. These sample-based evaluations are carried out according to the results-contract signed between the Ministry of Education and the National Board of Education.

With regard to these evaluations, the position of students within special education is secured by special arrangements.

### 6.2.3 Evaluations in vocational education

Evaluations concerning learning achievements in vocational education need to be comprehensive and take into account the goals of education in terms of training the students for working life. In vocational education, evaluations that concern specific fields or sectors should be based on the results contract or evaluation plan signed between the Ministry of Education and the National Board of Education. As for the general subjects common to all, the specific evaluation themes are decided by the National Board of Education.

The evaluations are designed to provide information about the extent to which the education has met the objectives set by the framework curricula.

In vocational education the evaluation of learning achievements is based on tests arranged for vocational students. These tests and subsequent analyses may concern all the students or be based on samples, and they may be directed at general subjects, general qualifications or at the theoretical base of the field. Professional competence can also be evaluated through practical demonstrations. Mainly, these practical examinations are used only when a field is in the focus of a larger national evaluation. When designing and carrying out such tests, the developing system of competence-based examination should be utilised as far as possible.

The general subjects common to all

In basic vocational education there are sample-based nationwide evaluations of the general subjects that are common to all students. For this purpose, test items are being designed, and this work seeks, when possible, to take advantage of prior evaluations suitable for the age range. With regard to foreign languages, the test system of the *National Certificate of Language Proficiency* can be harnessed to serve educational evaluation so that the test fees are paid for the students in the sample. The sets of test items for vocational students can also be multidisciplinary. The theme of evaluation may vary so that, parallel to or in association with subject-specific items, the test also includes elements relating to learning-to-learn skills, communicative competence, and desire for self-development.

Evaluation of general qualifications

General qualifications can be evaluated either separately or in conjunction with the theoretical base of the profession. This may take place by means of field-specific, sample-based national evaluations or as comparative evaluations between different fields, in terms of the standard and quality of the general qualifications provided. General qualifications may be evaluated through diverse test items so that these topics may take the form of applied tasks presented in conjunction with tasks related to field-specific competencies. Another possibility is that these topics appear in specially designed thematic task series concerning, for instance, internationalisation, entrepreneurship, service capacity, work safety, environmental awareness or other such issues useful to everyone to qualify for a profession.

## Evaluation of professional competence

Professional competence is evaluated in vocational education for both youth and adults, emphasising educational objectives deriving from working life. The evaluation of professional competence can be targeted at both its theoretical and practical components. As for the theoretical knowledge of the field, evaluation concentrates on the theoretical elements of the core contents of the profession. For this purpose, a series of test items are being designed to be then subjected to an evaluation by experts in the field. These experts include, in addition to teachers in vocational institutes, representatives of working life.

The achieved professional qualifications can be evaluated through skill demonstrations, when typical work tasks of the field can be examined with feasible and reasonable arrangements. As far as possible, the evaluations seek to follow the practices already established within the system of competence-based examinations. With respect to skill demonstrations, evaluation also calls for an evaluator from outside the school. With regard to skill demonstrations, the reliability aspects of the evaluation situation must be approved by the National Board of Education. The evaluation of these demonstrations or practical works must cover all the main phases of the work: planning, implementing, consideration of development possibilities, and self-assessment of the work performance. A demonstration work must be evaluated by at least three evaluators, and at least two of them must approve the work.

In these evaluations, the position of students within special education is secured by special arrangements.

### 6.3 Evaluation projects

Project-based evaluation activities utilise, besides information collected regularly through indicators and assessments of learning achievements, reports, evaluative evidence produced in expert co-operation, and information provided by evaluation research.

Project-based evaluation is focused on theme areas considered important for schooling and education. The projects may concern either the entire education system, specific types of school, major problems for education policy, or they may concentrate on the evaluation of a theme area or of a particular field of education.

Characteristically, the projects are carried out through a large network and in co-operation with related authorities, research institutes and other expert organisations.

Of particular importance for these projects is broad-based acquisition of information, which is to serve decision-making both at the national and at the local level, as well as the activities of schools and authorities. For this purpose the projects also utilise information from self-evaluations taking place at the local and school levels.

The projects yield evaluation information on educational outcomes with respect to the effectiveness, efficiency and economy of the activities concerned.

## 7 Stimuli for school-based self-evaluations

The responsibility for school-based self-evaluations falls primarily upon the principal and the teachers. The purpose of self-evaluation is to develop the school's activities. During the process of self-evaluation the school's strengths and weaknesses are analysed in order to find out the most relevant targets for development.

A self-evaluation process should start with a staff meeting, in order to discuss the need for self-evaluation and to decide on an approximate time frame and extent of the process. It is usually good if self-evaluation is commenced as a process with a fixed time outline, with the maximum duration of two school terms, where all parties concerned agree upon the needs and intentions for these efforts. The best results can be obtained when all members of the school community recognise the importance of the evaluation process and commit themselves to do their share with regard to collecting and processing the evaluation information. There should also be someone specifically assigned to take charge of the planning and leading of the process.

Self-evaluation may concern the school's development in general, or it may focus on a clearly defined target area. It is important to adjust the evaluation efforts to a realistic scale. A self-evaluation process can be carried through successfully so that the person in charge prepares a schedule specifying the tasks that need to be taken care of. Each subtask is then assigned to individual persons or small groups to handle. Shared meetings to be held during the self-evaluation process need to be scheduled so that everybody can attend them. The concrete result of the process is typically an evaluation report, which contains a description of the aims of evaluation and the process itself, and above all, evaluative conclusions for development measures. Drawing conclusions is the most crucial part of an evaluation process, and therefore several meetings must be arranged solely for this purpose. On the basis of the conclusions drawn, subsequent development measures will be planned, and a timetable as well as the person(s) in charge will be assigned for each of these development measures. In most cases it is necessary that the principal (or headmaster) take an active role in following and encouraging the development activities.

In most cases it is also necessary to arrange some staff training to support the self-evaluation process. Such training can be given jointly to everyone by an external instructor, or it can be differentiated so that everyone may seek the kind of training they see fit. In some cases, resorting to peer evaluation may

be the best alternative for this training as well. In practice, peer evaluation works best if the school can find another school operating in similar conditions, so that they can share experiences. It is a good idea to select specific themes for the visits and counter-visits between the schools, so that each party considers the counterparts' work practices from the viewpoint of their own evaluation objects, while learning and adopting the best features from each other.

Generally speaking, the vital issue for succeeding in a self-evaluation is how well people can find agreement on the objects of evaluation and on the applicable procedures for information acquisition. Below, there are some stimulus questions through which the efficiency, effectiveness and economy of activities can be evaluated. The intention of these questions is to gear attention towards evaluation objects that are essential for a school's operations. As all self-evaluation processes are different, the issues considered are worth pondering carefully together. It is also important to agree on what kind of data will be collected for the evaluation. Often the school's statistics, annual reports, and recorded outcomes on learning achievements already provide a substantial set of valuable information. Results of interviews and questionnaires specifically designed for each evaluation can also be used.

The framework for evaluating educational outcomes, which is designed for national evaluation purposes, can be employed also in a school's internal evaluation or self-evaluation. An individual school is a functional part of the whole school system and also a unit that can independently develop its own activities. Moreover, for the people working there it is also a working community.

## 7.1 Evaluation of efficiency

### 7.1.1 Evaluation of efficiency in comprehensive school and in upper secondary school

Educational provision

- Does the planned provision correspond, in terms of its objectives, to the needs of society, working life and the individuals?
- Is the school within reach?
- With relation to options, how is guidance and information arranged?

#### Timeliness and the ability to react

- Is the education provided in such a manner that the syllabi as well as the teaching and working methodology are up to date?
- Does the education include utilisation of new innovations?

#### Pedagogical arrangements, quality of instruction, and co-operation partners

- Is the value basis for the activities considered?
- What is the recognised concept of learning in the organisation?
- How is the curriculum perceived and implemented in the school? What is the activity profile like?
- How much choice does the provision contain, and to what extent does it allow for personal study plans in practice?
- Has the school got access to a reserve of learning materials that are sufficiently up to date and comprehensive?
- What is the library like?
- Have the needs of special education been taken into account?
- Is there sufficient support available to dyslexic students?
- Is other special education arranged appropriately?
- How do study guidance and student advising operate?
- How do study materials correspond with the objective of learning?

#### Co-operation between school and home

- Which forms of co-operation are used to support the children's development?
- To what extent are learning and schoolwork considered a pleasant experience?
- How is dissimilarity taken into account?
- How competent are the teachers considered to be?
- Is the general framework for teaching up to date?

#### Duration of education

- Is it possible to change the respective lengths of different modules through teaching arrangements?
- How has the system of non-graded courses affected the pass-through times in the upper secondary school?

#### Dropping out / graduation

- What is the drop-out rate?
- Does the school keep a record of dropping out and the underlying reasons?
- How are absences registered?

- What are the measures taken in reaction to absences?
- How does the school process and utilise information about the reasons for dropping out?

#### Overlap in education

- Are there any preliminary assessments to estimate the starting level for different subjects?
- How is information concerning prior student reports recorded?
- How are students credited for studies in another school?

#### Staff

- What kind of educational background and work experience do the teaching staff have?
- Does the staff's education and competence level match the requirements of the education provided?
- Are there any external experts whose help the school can resort to on a temporary basis?
- How is the staff's in-service training arranged?
- Are the qualifications of other staff at an adequate level?
- What has been done to ensure the teachers' ability to teach well (for activities increasing general satisfaction and improving the learning environment)?
- Are the teachers actively interacting with each other and with teachers of the same field in other schools?

#### Facilities and equipment

- What is the physical teaching environment like?
- Is the school's equipment up to date and adequate with regard to the contents of teaching and modern requirements?
- Do the students have enough space and facilities for individual training and learning at their own pace?
- How is the use of the library arranged?
- Does the school have adequate connections in terms of data communications and information services?

#### Regulations and agreements

- Are people appropriately aware of the regulations that direct the school's activities?
- Do the guidelines support learning?
- Are the regulations and agreements that control teachers' and other staff's activities up to date?
- Are the regulations concerning schools observed for the learner's benefit?

The school's management culture

- Does the management culture of the school support learning?
- Is the working atmosphere considered encouraging, open and motivating?
- How is teachers' and headmaster's co-operation organised with regard to planning and evaluation activities?
- How do personnel management and the planning system for in-service training function?
- How is material administration being managed?
- How has the school's integration with the other parts of the local educational network been taken care of?
- How does the school's communication network function otherwise?

### 7.1.2 Evaluation of efficiency in vocational education

Educational provision

- Has it been ensured that there are work opportunities in the region that match the supply?
- How does the educational provision correspond to national needs?

Timeliness and the ability to react

- Does the organisation have good connections with working life?
- When planning the study options, have the needs of the near future been taken into account?

Pedagogical arrangements, quality of instruction, and co-operation partners

- Do the goals include aspects such as constructing on a theoretical basis, creating open learning environments that are sensitive to the student's needs, and taking maximal advantage of the school's operating environment?
- Can the ratio between teaching and work practice be negotiated according to the professional field or the students concerned?
- Are the contents of instruction adequately conceptual and theory-based?
- Does the education contain a balanced mixture of general subjects, general qualifications and occupational elements?
- How well do the teaching methods correspond with the students' wishes?
- Is the format of education based on year-grades or is it course-based?

- Does it allow for self-direction?
- Has multiform teaching been taken into efficient use?
- How do the study materials correspond with the aims of education?

#### Duration of education

- Is there an aim to optimise the duration of studies according to the student?
- Is it possible to change the respective lengths of different modules through teaching arrangements?

#### Dropping out / graduation

- What is the rate of dropping out from study programmes or from individual modules?
- What are the measures taken in reaction to dropping out and non-attendance?
- How is information about dropping out acquired and utilised in the development of the school?

#### Overlap in education

- What kind of student analysis is made of the entrants?
- How does the school analyse students' prior education, which may be beneficial for various professional aspects?
- How is prior general education taken into account?
- What is the crediting policy and practice the school follows?
- Does the school use individual student records or personal study plans?

#### Staff

- What kind of educational background and work experience do the teaching staff have?
- Does the staff's education and competence level match the requirements of the education provided?
- Are there any external experts whose help the school can resort to on a temporary basis?
- How is the staff's in-service training arranged?
- Are the qualifications of other staff at an adequate level?
- What has been done to ensure the teachers' ability to teach well (for activities increasing general satisfaction and improving the learning environment)?
- Are the teachers actively interacting with each other and with teachers of the same field in other schools?

### Facilities and equipment

- What is the physical teaching environment like?
- Is the school's equipment up to date and adequate with regard to the contents of teaching and modern requirements?
- Do the students have enough space and facilities for individual training and learning at their own pace?
- How is the use of the library arranged?
- Does the school have adequate connections in terms of data communications and information services?
- Do the tools and equipment comply with adequate safety standards?
- How are the quality and safety norms of work training places investigated?

### Regulations and agreements

- Are people appropriately aware of the regulations that direct the school's activities?
- Do the guidelines support learning?
- Are the regulations and agreements that control teachers' and other staff's activities up to date?
- Are the regulations concerning schools observed for the learner's benefit?

### The School's management culture

- How have the school's working life contacts been organised from the respective viewpoints of the community and the individuals?
- Who is in charge of the administration of international projects?
- Who is in charge of students' international contacts?
- How does the management system convey information about education and labour market developments?

## 7.2 Evaluation of effectiveness

### 7.2.1 Evaluation of effectiveness in comprehensive school and in upper secondary school

- How do the results of education correspond with the needs?
- Are the actual educational outcomes favourable from society's point of view?
- Has the education increased the student's readiness for working life?
- Are the other consequences of education favourable from the student's point of view?

Meeting the objectives: learning achievements

- How well have the educational objectives set in the curriculum been met?

Learning-to-learn skills

- To what extent has the education managed to advance the students' skills of learning?
- Has the students' problem-solving ability improved?
- Have the students' abilities improved in terms of acquiring, processing and adopting new information?
- Have the students' self-esteem and positive views on studying increased?

Communication skills

- How well have the students' communication skills (visual, literary, oral) developed?
- To what extent have the students' social skills improved?
- How well have the students developed in terms of their ability to utilise electronic communications?
- Are the students also encouraged to communicate in a foreign language?

Motivation for self-development

- How successfully has the education conveyed the idea of lifelong learning?
- Has studying increased/decreased the students' desire for self-development?

### 7.2.2 Evaluation of effectiveness in vocational education

(In addition to the points made above in conjunction with comprehensive and upper secondary schools)

Meeting the qualification requirements: subject- and field-specific results

- How well has the education met the specific educational objectives presented in the curriculum?
- Do the acquired professional skill and various aspects of competence correspond with the objectives that were set in the study programme and personal study plans?
- Does the education produce sufficient conceptual mastery of the field or subject?
- Does the education produce practical competence?

### 7.3 Evaluation of economy

- How are the amount and allocation of available resources decided?
- How is the process of budgeting handled and how well can the budget adjust to changes the activities require?
- How is the use of resources monitored (input indicators)?
- How is the volume of educational and other services measured (output or performance indicators)?
- What kind of performance-based or other indicators and indices are used when monitoring and evaluating the economy of the activities?
- What kind of comparative information (national, regional, school-based, previous year, etc.) is used in the evaluation of economy?
- How well is the staff aware of the expenditures or of the cost structure?
- What is the school's funding structure like, and what are the factors involved?

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