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**EVALUATION AND OUTCOMES IN FINLAND  
– MAIN RESULTS IN 1995–2002**

**Evaluation 10/2002  
NATIONAL BOARD OF EDUCATION**

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Layout: Layout Studio Oy/Marke Eteläaho

ISBN 952-13-1608-X (nid.)

ISBN 952-13-1609-8 (pdf)

ISSN 1238-4453

Yliopistopaino Oy, Helsinki 2002

## PREFACE

Assessment plays a very significant part in the educational management system in Finland. The new legislation introduced in 1999, even some activities implemented before that, aimed to distribute the responsibility for decision-making so that it is closer to local authority. This is why the administrative body in charge of management has an important decision-making power over how education is organised and over the detailed curriculum that teaching is to be based on. In terms of the educational system as a whole, the principal change effected by the 1999 act is the increased importance of assessment as a tool for managing education. Assessments are carried out on a national level by official bodies, in a network of cooperation with researchers and universities. National-level assessments have focused on a broad evaluation of the educational system in terms of effectiveness, efficiency and economy. At a local level, the focus has been on evaluation of the quality of education, paying attention to the development of establishments' quality control systems and self-evaluation tools. At a school-specific level, attention has been paid to the measures taken for improving the quality of education, and, lately, especially to improvements in teaching and to classroom assessment.

Since 1994, large national assessment projects have been carried out, suitable for use in finetuning the assessment methodology. The national learning result assessment system has become a central way of producing data on the effectiveness of operations. Wide-ranging evaluations of the state of education have made use of large-scale surveys, statistical data, interviews and statements given by professionals.

Incentivising materials have been put on the internet for the purpose of developing primary and secondary schools' self-assessment procedures. Special materials have been developed on the basis of internationally renowned quality control methods, for use by vocational and adult learning schools. This was done in cooperation with representatives of educational establishments.

Finland has also taken part in international assessments, carried out within basic education on the initiative of the OECD, amongst other bodies. Finland's performance in the PISA assessment has attracted a series of international visitors to the country, who are interested in the educational management system and the status of assessment work in supporting administrative decision-making. A country-specific study carried out by the OECD on Finnish adult education has just been completed as well.

This publication compiles the most important results of the latest national assessments evaluating basic, vocational and adult education. The publication also includes articles on the evaluation of the quality of education and the

development of student assessment, both of which issues will be very important focal points for evaluation and development in the near future. The article at the end of part two describes the practical incentivising materials created for the support of schools' self-evaluation procedures, which are at the disposal of all schools.

I hope that the activities taken in Finland will initiate a discussion, which will help to make assessment a functioning part of the educational management system.

Ritva Jakku-Sihvonen

# CONTENTS

Jukka Sarjala <b>FOREWORD</b> .....	<b>7</b>
--	----------

## **PART ONE**

### **MAIN RESULTS OF THE NATIONAL EVALUATION PROJECTS 1995–2002**

Ritva Jakku-Sihvonen <b>MAIN RESULTS OF THE ASSESSMENTS CONCERNING PRIMARY AND SECONDARY EDUCATION BETWEEN 1995 AND 2002</b> .....	<b>11</b>
---	-----------

Anu Räisänen and Tarja Frisk <b>THE EVALUATION OF VOCATIONAL TRAINING</b> .....	<b>28</b>
--	-----------

Pentti Yrjölä <b>THE OUTCOMES OF THE ADULT EDUCATION SYSTEM IN THE LIGHT OF EVALUATIONS</b> .....	<b>62</b>
--	-----------

## **PART TWO**

### **SOME METHODOLOGICAL ISSUES**

Harri Pitkaniemi <b>THE PARADIGMS OF RESEARCH ON TEACHING AND THE ASSESSMENT OF EDUCATION</b> .....	<b>77</b>
--	-----------

Kirsti Mäensivu <b>ASSESSMENT AS SUPPORT FOR THE LEARNING PROCESS</b> .....	<b>98</b>
--	-----------

Renata Svedlin <b>MATERIAL ON SELF EVALUATION ON THE WEB</b> .....	<b>115</b>
---	------------

## **PART THREE**

### **THEMATIC EVALUATIONS**

Antti Rajakorpi: <b>EVALUATION ON SUSTAINABLE DEVELOPMENT IN EDUCATION</b> .....	<b>123</b>
---	------------

Ulla Numminen <b>THE STAGE OF STUDY GUIDANCE IN 2002</b> .....	<b>126</b>
---	------------



## FOREWORD

The systems used in Finland for regulating and managing education changed dramatically during the 1990s. Finnish education policies underwent a very significant process of expansion between 1960 and 1990, and that period also saw many reforms related to the structure of the education system. That was the golden age of faith in planning. All social policy sectors favoured a step-by-step planning approach and a decision-making hierarchy based on this. A strong centralised management system was required for the reforms to be implemented and the aims to be met.

The education policies of that period had several specific characteristics that favoured centralisation. In order to safeguard equality of opportunities in education, public resources had to be allocated in a purpose-oriented way. Educational aims, curricula and management organisation methods were regulated according to uniform national rules. It was also believed that making education to a large extent the responsibility of the public sector would support the aim of attaining equality. In Finland this meant that the responsibility for organising education was transferred almost entirely to municipal governments. Universities were outside the authority of municipalities, though, as they were managed by the national government.

The creation of a centralised management system was justified by saying it would rationalise and strengthen the implementation of large-scale social policy reforms. Regulation on a national level was also required to carry out reforms in the structure of the education system. The system, however, was inflexible and formal, excessively monolithic, and did not give enough scope for individual choices. People's opinions on the differences between the work of public and private operators changed; the possibility for making individual choices became more highly valued and the public sector was not considered to have the necessary resources for offering services according to people's actual needs. The principles of market economy were gradually taken into use in sectors in which no kind of competition had previously been allowed. Municipalities and the government began to make use of private service providers and to subcontract their operations. They wanted to shift decision-making powers closer to the customer and the organisations responsible for the services.

A decrease in the level of regulation in education and the transfer of power towards the lower levels of management might negatively affect equality of opportunities. In terms of education it would be especially bad if already in basic education differences appeared which might jeopardise students' possibilities for accessing further education or succeeding in it. Education policies must continue to ensure that the requirements of equality and rights are met; however, each educational organiser must have sufficient freedom of

choice in order to find the optimum solution for specific circumstances. The educational organiser must be able to choose the procedures to use, whilst public sector management should concentrate on their results. It is still the responsibility of centralised management to direct the educational organisers; however, they must not do this with an emphasis on rules or sanctions but by making the aims of education clearer, by looking after the professional skills of staff and by making sure information is shared.

The evaluation of education has not replaced norm-based management as the only regulation mechanism, but it is one of the methods used for improving the system. It is important that the educational organiser has enough information about the operating environment as well as access to comparative data on the levels of achievement in the country. At a national level, the decision-makers must have a clear understanding of the state of education (how well equality is implemented, how beneficial the nationally regulated aims are, how well these are met in practice, and how economical the system is).

International evaluation processes are needed in addition to national ones. The integration of Europe and globalisation in general are boosting the internationalisation of education. One of the aims of integration is to promote the mobility of workforce and services. Even though the compatibility of educational systems is not a requirement, it is a fact that the education systems of different countries are, behind the scenes, becoming more integrated. The employment market is consciously being opened, and competition for skilled workforce transcends national borders. Comparative data on different countries' learning results is useful for directing national reform processes. In order to ensure that job applicants continue to be skilled, it is necessary to recognise both the strengths and the areas requiring improvement in the national education system.

Jukka Sarjala

# **PART ONE**

**MAIN RESULTS OF THE NATIONAL EVALUATION  
PROJECTS 1995–2002**



## MAIN RESULTS OF THE ASSESSMENTS CONCERNING PRIMARY AND SECONDARY EDUCATION BETWEEN 1995 AND 2002

In Finland comprehensive schools have been evaluated in different ways during last few years. The present strategy for evaluating education was accepted by the Ministry of Education in the 1996. It has been published in January 1997 entitled Strategy for Educational Evaluation .

In the beginning of 1990's a very important assessment was carried out and the results were published under the title *Oppiiko oppilas peruskoulussa?* [*Does the Student learn in Comprehensive school?*, Linnankylä and Saari 1991, University of Jyväskylä, Educational Research Centre]. The results from that project were available for use when the curriculum that is still valid were being created.

In the management system of education very many reforms were carried out during 1991–1999. Decentralization of the management process has been expansive. For the national management mansided evaluation produced by the central government has become very important.

The assessment process begun in 1994 by the Finnish National Board of Education has broadened the target area of performance evaluations so that evaluations began to be focused not only on assessing learning results but also on examining the efficiency and economy of the schools' operations. The model for evaluating the performance of education system reinforced by the National Board of Education, the study generated information on the economy, efficiency and effectiveness of basic education. The theoretical model used in reporting the results of these large scale evaluations has been published in the 1995 and again in more detailed form in the 1999 by name "A framework for Evaluating Educational Outcomes in Finland" .

This short article comprises the most important observations that arise from evaluations concerning primary and secondary education between 1995 and 2002.

### 1 EVALUATION FOCUSED ON EQUALITY IN SECONDARY EDUCATION IN 1996

Information has been gathered on the quality of teaching and its operating principles by making assessments of students' learning-based results as well as two status assessments. The study "Toteuttaako peruskoulu tasa-arvoa" ["Are Policies of Equality Implemented in Basic Education?"], Jakku-Sihvonen *et al.*, 1996], focused on equality in the secondary education, was carried out through a broad network of cooperation between the National Board of Education,

local governments and universities. A summary of the evaluation focusing on secondary education (students between the ages of 13 and 16) expresses the outcomes of the evaluation in the following way:

The costs of basic education have gone down dramatically in many districts. On the basis of assessment data we receive the impression that the operating costs of schools offering basic education cannot be reduced further without negatively affecting the level of education offered. Already now we have received signs indicating that the possibility of developing and improving the quality of teaching is being endangered by cost-saving measures.

In the interests concerning equality between regions in education it is important to note that costs have been reduced more significantly in the more sparsely populated areas than in other areas.

Differences between schools are becoming evident in their abilities to implement equality policies in order to preserve students' equal opportunities to continue into higher education. Problems exist especially with relation to language studies. The sparsely populated areas are also more likely to find themselves left with a lack of competent teachers, especially in the arts. The rationalisation of the school network has already begun to have negative effects: for instance in northern Finland some students have to travel inordinate distances to get to school.

These signs give cause to feel that if trends continue to develop in the same direction, it is easy when economising to endanger equality in education in terms of different regions.

An examination of developments in socio-economic equality showed that efficiency-related developments in basic education have been made in the desired direction. The students from the lower social classes will also increasingly often go on from basic education into higher education. Real opportunities for continuing into higher education have been opened in the basic schooling system for an ever-increasing section of the students in that age group, and at the same time we have seen an increase in the number of higher education places.

The effect of a student's socio-economic background on his or her school-related level of motivation has not been eliminated in basic education. The outlook on schooling of those children whose parents have only received a limited amount of education is different from that of the children whose parents have university degrees. Especially the fact that some children do not apply at all to get into higher education is a problem in some cases clearly and directly related to socio-economic factors.

The assessment data made it possible to observe a tertiary effect, which gives signs of the positive aspects of education: the higher the mother's level of education, the more likely her child is to value freedom of speech and an independent quest for knowledge as a study method. In terms of society, this is an important signal about the effectiveness of education.

The differences between girls and boys apparent in students' school achievements, their school-related self-images, their levels of self-confidence and their attitudes towards studying are significant and indicate an adherence to traditional ideas regarding gender. Boys have high levels of self-confidence and out of the subjects assessed they perform best in mathematics. Although boys value success at school, their attitudes towards studying are problematic. Girls on the other hand have low levels of self-confidence and are socially oriented, and although they perform better than boys for instance in the study of languages, their confidence in using a foreign language for verbal communication is lower than that shown by boys. Boys' and girls' different attitudes towards studying reflects the culture that surrounds them. The gender-difference-oriented operating ideals predominant in society affect schools, thus hindering the fulfilment of the aims set for basic education regarding a student's self-development according to his or her inner (rather than social) preferences.

Clear signals exist regarding the fact that basic education has had a very positive effect on the development of equality in the Finnish society, especially by raising the general standard of education. The absolute majority of Finns complete basic education and value schooling. After basic education, a majority of students continue into senior secondary school or vocational education.

The bigger picture of basic education as an institution that promotes equality and competitiveness is on the whole positive. The fulfilment of aims set for basic education is constantly facilitated, and the weaknesses that we now perceive with relation to equality and competitiveness are mainly related to the surrounding society's operating principles and above all to the negative trends in the country's economy in the last years and the new challenges set to basic education with regard to globalisation. [Jakku-Sihvonen, Lindström and Lipsanen, 1996: 542–544]

Worries about equality in education, especially with regard to significant imbalances in the results of students from different schools, led to the development of an international system for the assessment of national learning-based performance results. Large-scale national operations for the development of mathematical and scientific learning (the LUMA project) and foreign language and culture teaching (the KIMMOKE project) were given a push forward by the assessment results described above. Special attention was given

to the teaching of Finnish as a first language and of literature, due to the worries that had arisen from the assessment results.

## 2 QUALITY OF EDUCATION AT SCHOOLS 2001

The next large-scale evaluation project to be carried out focused on education between the first and sixth grades of the primary school system (children between the ages of 7 and 13). A report on the project, "Opetuksen laadun arviointi perusopetuksen 1.–6. vuosiluokilla" ["Evaluation of the quality of education between the first and sixth grades of basic education", Korkeakoski *et al.*] was published in spring 2001. The report deals with students' results in mathematics and first-language Finnish or Swedish, and points our attention towards teaching, the state of schools, and developments in the impacts of economising in schools.

**The general impression is that schools are doing very well**, but as always, there are functions that need to be developed.

### **The learning environment**

On the basis of an evaluation of the state of school buildings, the report concluded that there were hundreds of primary school buildings threatening to fall into disrepair unless preventative steps were taken. In around one third of schools, or about 1000 of them, maintenance work was carried out less than once every two years. In around 65% of schools there were one or more points needing repair work in their so-called home classrooms (classrooms that a set group of students returns to for certain classes). According to the findings, mistakes made in building the schools as well as insufficient repair work caused there to be problems in many schools. The main problem in the classrooms of around one third of schools was found to be bad ventilation. Around 75% of schools were in need of repair work related to ventilation systems [Uurto, 2001: 109, 112].

Uurto reckons [2001] that it is because of districts' limited financial resources, or even their lack of resources, that maintenance work is often done only in conjunction with essential repair work. The carrying out of this repair work is delayed while schools wait to receive government grants to cover it. During the wait the damages to the buildings multiply and finally carrying out the work costs the taxpayer considerably more than it would have had it been done immediately.

A lack of space makes it difficult to use certain kinds of working methods in many schools. In around one third of schools there are home classrooms whose surface area is too small. Too-small spaces cause problems especially with regard to technical work and also form a risk to students' safety. Taking into account new methods used in technical work, and hygiene requirements that are tighter than before, the dimensions of current classrooms are too small for today's needs. On the basis of visits made to schools it was observed that also the furniture and equipment used for technical work were in need of repair [Uurto, 2001: 107, 115–116].

## Teaching

When assessing the quality of the teaching given between the first and sixth grades it was observed that **the schools' teaching plans do not direct teaching in the expected ways**. School-specific teaching plans differed greatly from each other, as did each teacher's methods of planning their own work. Teachers' own work planning was made on a short-term basis, often only to apply to the next few days. According to Korkeakoski [2001], it is still a '**culture of doing things alone**' that applies amongst teachers. Although there are signs of the diversification of the teaching systems and methods used, there are few study periods based on mutual interaction between students. Genuine discussions about teaching are used very little in classroom work. **Traditional teacher-centred ideas are clearly still in force with regard to the main working methods in schools** [Korkeakoski, 2001: 157–158, 172–173].

## Materials used in teaching and learning

The status of teaching materials in practical teaching work is still central [Korkeakoski, 2001; Niemi, 2001]. As working methods are renewed, school libraries should become an even more important factor within school work. According to the assessment results almost 90% of schools had some sort of library. Out of Finnish-speaking schools only every other one had a library whose space was sufficiently large. In almost one third of schools the main part of the books in the libraries were purchased 15 years ago. In around one fifth of schools there were not enough books [Uurto, 2001: 117–118].

## Assessing student s' achievements at school and at classroom

Problems seem to exist with regard to the assessment of students' achievements at classrooms. When assessing students' levels of learning it was noted that schools should focus on making student classroom assessment criteria based and fair. In classes deemed weak in terms of learning to learn, grades seemed to be 'bumped up.' This can reflect on school-specific grades so that the school may seem to be awarding mainly the grades 5, 6 and 7 (out of 10), though on the basis of learning levels it would be more correct for them to be awarding the grades 4, 5 and 6. In studies done on sixth-graders the correlation between success in an exam and the grade on the student's report was not very reasonable, especially with regard to students who had been awarded the grades 7 and 8 [Hautamäki *et al.*, 2000: 241; Niemi, 2001: 59–60].

On the basis of data regarding sixth-graders, the variations within the results achieved in written tests by students who had been awarded a grade 8 or 'very good' (the third-best verbal grade on the pass-rate scale of 4–10) in first-language Finnish were surprisingly large. This indicates that the grade scale is not used to its full extent. A wide range of achievements were awarded grades between 7 and 9. If the results of the written tests are used as a basis for an assessment, the report grades given to students of first-language Finnish were too high. This is true especially of grades awarded to boys. A similar trend was noticed in an assessment made on ninth-graders' first-language Finnish: from the results it appears that a grade 8 could be awarded to almost any sort of performance –

i.e. from a very poor one to an excellent one [Korkeakoski, 2001: 83–85; Lappalainen, 2000: 133]. With regard to Finnish as a second language (for Swedish-speaking students) it was observed by Toropainen [2002] that the distributions of grades varied greatly between the districts of Etelä-Suomi (southern Finland) and Länsi-Suomi (western Finland). For instance in the case of students that had completed a course in Finnish as an A language, a student whose result had been awarded a grade 6 in southern Finland could have been awarded a grade 8 in western Finland [Toropainen, 2002: 7]. An exception to the rule in the assessment results seems to be formed by mathematics. On basic education reports the distribution of grades for mathematics is even, and in general is in direct correlation to the learning levels apparent from national assessments [Korhonen, 2001: 33–34].

### **3 SCHOOL ACHIEVEMENTS ACCORDING TO ASSESSMENTS IN 1998-2001**

Since 1998 national, sample-based assessments have been carried out on a regular basis. Mathematics and Finnish or Swedish as the first language are assessed every second year by turns. Other subjects as well as learning to learn and communication skills are assessed in according to an annual plan accepted by the Ministry of Education. Up to now, national assessments have only examined a selection of subjects. This summary focuses on assessments made at the end of secondary education. Up to now, the following assessments of the final stages of secondary education have been reported on: mathematics in 1998 and 2000, science in 1998, Finnish as a first language and Swedish as a first language in 1999 and 2001, English in 1999, Finnish as a second language and Swedish as a second language in 2001, religion, philosophy of life and etiquette in 2000 and learning to learn in 2000.

Results for sixth-graders are available in mathematics and first-language Finnish from 2000, and in learning to learn from 1999.

#### **3.1 School achievements on mathematics**

Mathematics in basic education has been assessed both at the end of primary school (i.e. in the sixth grade), and at the end of secondary school (in the ninth grade). In the assessment of sixth-grade students' achievements in mathematics, 30% achieved a grade equivalent to 'very good' (grade 7–8 out of 10) or 'excellent' (above grade 8). Around 2% of the students failed (achieved below grade 4), and 11% of students' results were awarded an 'adequate' grade (grade 4–5). **The part of the syllabus that students did the best in was arithmetic, whereas students fared the worst in questions on applied mathematics.** [Niemi 2001, 49–53].

Sixth-grade girls did better than boys in all the parts of the exam syllabus except geometry, in which boys did better. When looking at results on a district-by-district basis, the best results in the test were achieved in Lapland. Differences between genders and districts were, however, small. **Sixth-grade students' attitudes towards mathematics and its study were very positive.** Boys' attitudes were slightly more positive than girls'. Boys' levels of self-confidence as learners of maths were also higher than girls' [Niemi, 2001: 52–57, 65–68].

**On the basis of mathematics assessments made in 1998 and 2000 at the final stages of basic education, i.e. in the ninth grade,** the main conclusion according to Korhonen [2001] is that two thirds of students demonstrated a good level of learning. The most significant drawbacks may be that just over one fifth of students had such deficiencies in their reading skills that this made it difficult for them to learn new things and therefore to apply the knowledge they had acquired in mathematics. An essential problem was also that students had a weak grasp of the central structures of mathematics (e.g. the rules of arithmetic). However, the number of students that did not perform in a satisfactory manner in the mathematics test accounted for only 4% of the total number of students [Korhonen, 2001: 31, 69–70].

On the basis of the grades achieved by students at the final stages of basic education in mathematics in both 1998 and 2001, the average achievement was 54% [Korhonen, 1999: 30; Korhonen, 2001: 30].

In general students did well in questions that demanded knowledge of the basic rules of arithmetic, although around one quarter of students had problems with the basics of mathematics. The greatest problems students encountered were to do with applying their knowledge to difficult questions. It is a positive development that girls and boys seemed to do equally well in mathematics at the final stages of their basic education. A small detail to note is that boys knew the basic rules of arithmetic slightly better than girls, but that girls did better in problem-solving tasks [Korhonen, 2001: 38].

**Around one quarter of students receiving basic education have clear deficiencies in their mathematical skills.** Students described thus are those who were awarded grades equivalent to less than 50% of the maximum points possible to achieve in the parts of the test related to the basic rules of arithmetic. In **questions requiring the application of knowledge** results were even worse than above. **The average rate of correct answers** in the part of the test requiring applied knowledge was **no higher than 45%**. One part of students has very poor skills in this area [Korhonen, 1999: 33; Korhonen, 2001: 30–35].

According to the results of the final stage assessments in both 1998 and 2000, girls' levels of self-confidence as learners of mathematics were clearly lower than boys', even though their results were just as good [Korhonen, 1999: 53–60; Korhonen 2001: 43–44].

A significant problem lies also in the fact that in terms of average grades, the difference between the schools that did best in mathematics and those that did worst came up to almost a quarter of the maximum possible grade.

In the international TIMSS comparative study, Finnish students have done well, coming out 14<sup>th</sup> in a comparison of mathematical skills in 38 countries [Kupari et al., 2000: 4].

### 3.2 School achievements in science

According to the results of the 1998 national assessments carried out in the sciences, the skills of students in basic education vary by subject. Results in biology were good, but much worse in chemistry and physics. The average performance result in the basic tasks of the biology test was 71%, in geography 65% and in chemistry almost 49%, but in physics the average performance result came up to only 35% [Rajakorpi, 1999: 60, 65–66, 69].

In the international TIMSS comparative study carried out in 1999, Finnish secondary education students came out as 10<sup>th</sup> in a comparison of the science skills of students in 38 countries. This can be considered a very good result [Kupari *et al.*, 2000: 5]. **In the international PISA study, which compared the science skills of 15-year-olds in 32 countries, Finnish students again did very well, coming out third.** Girls and boys were equally good in Finland [Väljjarvi *et al.*, 2000: 19]. Geographical differences were however found in science skills: the best results were achieved in southern Finland [Rajakorpi, 1999: 109–113].

### 3.3 Finnish and Swedish as first languages

A limited assessment was carried out with regard to Finnish as a first language and Swedish as a first language on sixth-graders (12-years old) in spring 2000. On the basis of the assessment carried out on sixth-graders' first-language Finnish in 2000, results were good. Out of the maximum points achievable for the test, girls averaged 71% and boys 57%. **The average result was 64%. Around 10% of the students had great problems with the parts of the syllabus which required written work.** A clear majority of this 10% was made up of boys. Differences between girls and boys were worryingly large in the results, but there were also significant attitude differences. In addition there were differences between the levels to which students read as a habit, which is considered to be crucial for writing skills. Girls read around twice as much as boys [Korkeakoski, 2000: 81, 92, 96–98].

**The sample of Swedish-speaking students** included in total 327 students receiving primary education in the sixth grade of 37 schools. Learning-based performance results were assessed with two written (essay writing) tests. **According to the assessment results, the majority of students had good or very good writing skills** [Hannén, 2001: 26–27].

With regard to first-language Finnish at the final stages of basic education, significant differences appeared between schools in both the 1999 and 2001 assessments. According to Lappalainen [2000], reading comprehension skills

were very good. Linguistic knowledge and writing skills were on average good in the 2000 assessment. The national assessment of basic education students showed that 38% of students reached a maximum of a 'good' grade in oral skills. In the districts of Itä-Suomi (eastern Finland) and Etelä-Suomi (southern Finland), reading skills were considerably better than in the district of Lapland. Girls did better in first-language Finnish than boys [Lappalainen, 2000: 63–65, 106].

It is worrying that on the basis of national assessments a significant amount of the basic education students that expressed an interest in continuing their studies in a technical college had trouble with the very basic skills in Finnish. From the assessment of basic education students' first-language Finnish skills it was observed that boys who were inclined towards continuing studies in technical colleges did not have acceptable writing skills. This accounted for 42% of all boys. In the 1999 assessment the writing skills of boys inclined towards technical college study were on average 'adequate' (grades 4–5 out of 10), but in the 2001 assessment they had fallen to a 'poor' level (below grade 4) [Lappalainen, 2000: 126–127; Lappalainen, 2001: 106].

With regard to first-language Swedish, in the 1999 assessment of ninth-graders a majority of students had 'very good' or 'good' skills. The results were evenly spread and not tied to differences in district, type of municipality or EU subsidy area. Out of the maximum attainable grade, girls achieved on average 71% and boys 60%. Students in Swedish-speaking schools fared better than those in Finnish-speaking schools in the parts of the test related to writing skills. Girls' writing skills were better than boys' [Hannén, 2000: 41, 83–85].

In general girls had more positive feelings about their capabilities in first-language subjects than boys [Lappalainen, 2000: 90; Hannén, 2000: 92].

### 3.4 Second national languages

Each student in Finland, regardless of his or her first language, must study also the other official language of the country, in the shape of second-language Finnish or second-language Swedish. Within these subjects each student can choose to follow it at an advanced level or at the basic level required of all students. Some bilingual Swedish-speaking students in Swedish-speaking schools take Finnish as a first language in addition to Swedish (in other words the Finnish as a first language for bilingual Swedish-speaking students course, or MOFI). This means that in practice they are bilingual.

The average learning result **percentage achieved by students in second-language Finnish was 59% or almost at a 'good' level**. The students that took the same test but had followed the MOFI course achieved an 'excellent' average, with an average performance level of 84%. Attitudes towards studying the Finnish language were very positive in all students. There were significant geographical differences between students of second-language Finnish: the best results were achieved in the bilingual areas of southern Finland, and the weakest ones in the coastal districts of western Finland [Toropainen, 2002: 6].

The average performance level of students taking an A language (Swedish chosen to be the main foreign language) was 62%. This means that Swedish skills are on average 'good.' For those not taking Swedish as an A-language it is compulsory to take Swedish as a B language; the average performance level in this subject was 53%, an 'average' result. In both subjects girls did better than boys. In the optional subject A-language Swedish, the girls' average result was 64% where the boys' result was 58%. Similarly, in the compulsory subject B-language Swedish, the boys' average reached only 46%, whereas the girls' average was 59% [Tuokko, 2002: 61–68]. In other words, according to the assessment results, optional Swedish is known much better than compulsory Swedish, though the attitudes towards the study of the language were not very positive. [Tuokko, 2002: 109].

### **3.5 School Achievements in English language**

There are clear geographical differences in students' results in the English language. The best results were achieved by students in southern Finland, and the worst results in the district of Lapland. Geographical differences were fairly significant in English language results. Results achieved on the island of Åland were clearly better than those achieved in mainland Finland, one reason being the fact that the population on that island is Swedish-speaking. The average performance level in English tests was 64%, a 'good' result. Girls did better in English than boys. The fact that Swedish-speaking students did better than Finnish-speaking ones in learning English is explained by the fact that both Swedish and English are Germanic languages. The average performance result for Swedish-speaking students in English was 74%, in other words 12 percentage points higher than the 62% achieved by Finnish-speaking students [Tuokko, 2000: 31, 35, 39–44].

### **3.6 Religion, philosophy of life and etiquette**

Students' levels of learning, skills and attitudes in religion, philosophy of life and etiquette were assessed at the final stages of basic education (15-years old).

#### **Religion**

The average learning result for those who followed the Lutheran line of teaching was 68%, a 'good' level. In the questions most central to Lutheran religious teaching, related to the Bible, the special characteristics of the Christian faith, the Lutheran confession and the structure of the Church, the knowledge of the students that took part in the assessment was 'good.' On the other hand the students' knowledge of the other big religions of the world and the numbers of supporters of each was either 'poor' or 'adequate.' Out of the main religions of the world, Islam was especially badly known. The average result of the students who followed the Orthodox line of teaching was 73%, or 'very good.' The

Orthodox students' performances were very good in questions that were related to religious concepts and symbols and to the Bible. Knowledge of the Orthodox Church and the other Christian churches was 'good.' Knowledge of the main world religions was in general 'average.'

### **Philosophy of life**

The philosophy of life is a subject instead of religion for those children who do not belong to any religious society. In the philosophy of life, students' levels of learning reached 59%, or 'average.' The knowledge of students taking the philosophy of life course was in general average. Understanding of ideology-related concepts and philosophies regarding life was 'good,' knowledge of moral questions was 'average' and knowledge of the main religions of the world and the geography of religions was 'adequate.' The majority of students had positive attitudes towards the subject and they believed it to be useful in order to understand different cultures, philosophies of life and national characters.

### **Etiquette**

In etiquette, the students' average performance level was 61%, 'good.' Knowledge of general issues related to Finland and Finnishness was on average only 'average.' Less than two thirds of the students knew in which year Finland gained its independence. The students felt that the study of etiquette helps them to learn to respect others. In their opinions, schools do not teach particularly good table manners, and they thought that good manners are learnt at home. At school, issues related to manners surfaced mainly in subjects such as home economics and in teachers' discussions with students' about their performances.

According to the assessment, at the secondary education students' attitudes towards life and the future were confident. In their opinions a good person was one who is honest, helpful and tolerant. The students wanted to be sociable and just, well mannered and tolerant. According to the assessment the students were aware of the dangers inherent in drugs. Girls had a significantly more positive attitude towards people being 'different' than boys. According to the students' descriptions, a certain amount of racism is present in schools. Bullying is seen mainly as a kind of psychological teasing, but there were also those who described it as physical. [Rusama, 2002].

## **3.7 Learning to learn**

**The assessment of students' learning to learn form part of the national performance evaluation strategy. Abilities in learning to learn are assessed with relation to knowledge and beliefs. Knowledge is measured with the use of questions and tasks, whereas beliefs are assessed with questions about the way the students understand things.**

In assessing primary school students it was observed that the parents' educational background was clearly related to students' achievements and above

all to their self-images as learners. The children of well educated parents fared better in the questions related to knowledge. **When assessing students' self-images and school achievements, significant differences between schools became apparent.** One observation important to the present study was that there were big differences between the districts belonging the old kind of district division in Finland [Hautamäki *et al.*, 1999: 193–207].

In terms of performances it was observed for instance that only 5% of students had good skills in making mental calculations. 65% of students achieved at least a 'good' result. Only 9% achieved a 'poor' result [Hautamäki *et al.*, 1999: 111].

In assessing students' learning to learn at the secondary education, thinking skills were examined in various different ways. According to Hautamäki [2000], **around 40% of basic education students have reached a level in learning to learn generally high enough in order to solve fairly difficult cognitive problems.** No differences were found between boys and girls [Hautamäki *et al.*, 2000: 64].

**When assessing students' skills in acquiring information, especially their skills in deduction, it was observed that on average girls do better than boys in this,** though there were some tasks in the test in which boys and girls did equally well. Geographical and school-specific differences were very small. The children of highly educated parents had better skills in acquiring information than the children of less educated parents [Hautamäki *et al.*, 2000: 79–82].

There were some geographical and school-specific differences in students' reading comprehension skills. Also in this the children of better educated parents did better than others. **Girls achieved clearly better results than boys in reading comprehension** [Hautamäki *et al.*, 2000: 91–95].

*In assessing the mathematics-oriented skills in learning to learn,* there were hardly any differences between girls and boys. We found that the parents' educational backgrounds had a statistically significant effect on students' capabilities in solving tasks related to arithmetic and algebra. **Around 5-7% of students in secondary education achieved the highest possible grades in mathematics, whereas 14–18% reached a 'commendable' level.** There were statistically significant regional and school-specific differences. The weakest results were achieved in the district of Lapland [Hautamäki *et al.*, 2000: 106–109].

When creating the test questions designed to assess students' *general knowledge*, the starting points were the thoughts of the general knowledge examination committee [KomM, 1989: 45] and the thoughts of the exam committee on the arts and social general knowledge [KomM, 1993: 31]. The test focused on history and cultural history. General knowledge levels were again related to students' parents' levels of education, and the children of more highly educated parents did best in the exam. **On the basis of this test we can say that Finnish students' level of general knowledge is not very convincing** [Hautamäki *et al.* 2000, 115–118].

The feelings of students who were finishing their comprehensive education towards their own motivations for studying were very positive. Students' main aims were to learn and to increase their knowledge. Students believed making an effort to be of importance in both learning and success. There were big differences between students. One quarter of them were very much oriented towards the avoidance of studying; in other words, they did not want to try or make an effort in order to learn. The lack of effort was evident especially in boys [Hautamäki *et al.*, 2000: 132–142].

According to the results of the assessment, girls were more oriented towards learning. They saw themselves making efforts and were more interested than boys in finding out the reasons behind their successes and failures. Girls also thought that they were applying challenging learning strategies to a greater degree than boys, and as such performed proportionally better. This was regardless of the fact that girls saw themselves as less capable and more likely to give up when faced with a difficult task [Hautamäki *et al.*, 2000: 133].

According to the assessment of ability in learning to learn, the level of self-awareness of Finnish ninth-graders was good. Similarly, their understanding of their own sociable nature was more positive than negative. Unlike in the case of sixth-graders, no geographical differences appeared in ninth-graders' levels of self-awareness and understanding of social principles. Also any differences that existed between schools with regard to students' self-awareness levels were very small at the end of secondary school [Hautamäki *et al.*, 2000: 164–172].

According to the results of the assessment, students' understanding of themselves as good, self-confident and intelligent students was positive. Girls considered themselves 'good pupils' more often than boys, and boys saw themselves as 'sloth pupils' more often than girls did. Those who had done better in their studies so far were more likely to consider themselves good and intelligent and less likely to consider themselves indifferent than those who had not done as well. The assessment also showed that the *aims* of students were related to success at school, access to higher education and, in the later grades, employment [Hautamäki *et al.*, 2000: 158–174].

The role of school in students' gaining skills in learning to learn is clearly more significant than its role in shaping their personal beliefs. According to researchers, schools are responsible for as much as a fifth of all the differences apparent between different students' skills in learning to learn. In the area of personal beliefs, the role of schools was clearly less significant [Hautamäki *et al.*, 2000: 250–251].

From the results of the national assessments we receive the impression that the national school achievement level is generally somewhere between 'good' and 'very good.' This conclusion can be seen as fairly positive, as the level of difficulty of the assessments was based on the criteria set by the National Board of Education with regard to assessment at the final stages of basic education.

#### 4. **SCHOOLS ACHIEVEMENTS ACCORDING TO THE INTERNATIONAL ASSESSMENTS**

The recently published international PISA study, which focuses on 15-year-olds' literacy in reading, mathematics and science painted a very encouraging picture of how well basic education has managed to make children and young people ready to meet the demands of everyday life. The success of Finnish students in the international comparison, especially in the area of reading literacy, shows that the level of difficulty and syllabus contents in Finnish basic education are equivalent to today's international basic education professionals' ideas about the aims of basic education.

**The PISA study is the broadest and best comparative study that have been completed in the OECD countries thus far.** Included in the study were all 28 OECD countries and four countries from outside the OECD. **The reading skills of young Finnish people were the most advanced in the OECD countries.** Also their skills in mathematics and science were amongst the top levels. The study indicates that 50% of Finnish 15-year-olds are excellent readers, when the average in the OECD countries is 32%. Within the different parts of reading, Finnish children were especially good in acquiring information and understanding and interpreting what has been read. According to the study only 7% of young people in Finland have poor reading skills, whereas the OECD average was of 18%.

The results indicate that in all 32 countries **girls have better reading skills than boys.** In Finland the difference between the reading skills of girls and boys is the largest in the OECD countries. According to the average numerical grades given, Finnish children are the best readers in the world (546 points). **On the basis of the average grades, Finnish girls (571 points) were without doubt the best readers in the world.** Their superiority over the girls in the next-best countries is clear from their scores: in Canada girls achieved an average of 551 points, and in Australia their average was 546 points. **Finnish boys achieved an average of 520 points in reading skills, which is the highest in the OECD countries and clearly higher than the OECD average.** Boys in Canada and Korea achieved practically as good a result with 519 points [Väljjarvi *et al.*, 2001: 10–15].

**Differences between schools** in students' learning levels were smaller in Finland than in any other country in the study. Differences in students' performance levels between **urban and rural schools** were in general not large, though the results of boys from rural schools were clearly below the national average. **The students' socio-economic backgrounds** were shown to have clear effects on their learning-based results. In all countries that took part in the study, the skills of children whose parents had the highest socio-economic backgrounds were the best. In Finland there were also differences, but these were clearly smaller than the average in the OECD countries [Väljjarvi *et al.*, 2001: 89–91, 97].

The Third International Mathematics and Science Study (TIMSS) carried out in 1999 showed that also in the subjects of mathematics and the sciences

the results of Finnish children who were at the end of their basic education came out well in international comparisons. In the evaluation aimed at seventh-graders (13–14-years-olds), **Finnish students' results were 14th in mathematics and 10th in science, out of the 38 countries that took part.** According to the study, the self-confidence of Finnish children with regard to learning mathematics and science was good. Their skills were good especially in biology, geography and chemistry. In physics Finnish children did worse than the OECD average. In mathematics, numbers and arithmetic were clearly the strongest points in the Finnish students' learning results, as were statistics and probability. Areas they found difficult were geometry and algebra [Kupari, Reinikainen, Nevanpää and Törnroos, 2001].

In the results of the PISA project, which assessed mathematics with a small test made from the point of view of everyday skills, Finns came out fourth out of 32 countries. In this study, Finnish boys and girls had equally good results [Väljjarvi *et al.*, 2001: 17].

The international CIVIC-Study “ Young Citizen” assessed the citizenship skills of 15-year-olds. Its results showed that **in Finland we need to pay attention to the development of citizenship skills and especially to motivating young people to take an active part in their democratic society.** The knowledge of Finnish children was generally shown to be good in this comparative study, in which 28 countries took part. According to the study Finnish children had the most problems with understanding the points of contact between economy and democracy. On the other hand, Finnish children's trust in the social institutions was not particularly strong. It is fairly worrying that the attitudes of boys towards immigrants came out as fairly cool [Liimatainen, 2001; <http://www.jyu.fi/ktl.civics.htm/>].

## **5. THE IMPORTANCE OF THE SCHOOL MANAGEMENT**

A few school visits were made in order to make observations regarding the differences between schools' operating principles. **There are very clearly differences between schools' operating principles. School visits made after the mathematics assessment had taken place backed up this observation.** From the results of the mathematics assessment carried out in 2000 it was noticed that the differences between students' results in the best-performing schools and the worst-performing schools were surprisingly large. The school visitor reported that the problem in the schools that had performed poorly was not specifically the level of teaching in mathematics, but was usually related to general issues to do with the school's working and educating environment. This means that we should pay more attention to the in service training of the principals and the importance of schools management in general.

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## **THE EVALUATION OF VOCATIONAL TRAINING**

### **Summary of the Results of Evaluations Carried out Between 1995 and 2001 and of Work Done to Improve Evaluation**

#### **1 INTRODUCTION**

Several evaluations of vocational training were carried out at the behest of the National Board of Education between 1995 and 2001. The main part of these evaluations consists of all-encompassing studies of different courses, with evaluations of learning-based results integrated into these. In addition to evaluation projects to examine national levels of achievement, the National Board of Education, together with many educational establishments, has also developed methods related to the quality management of vocational training. Quality management tools have also been created for apprenticeship training.

This article describes in a summarised way the results of the evaluation carried out by the National Board of Education between 1995 and 2001. In addition to learning results, the report examines the education system, the operating principles of the establishments, the teaching and the resource-related results.

The aim of this report is to awaken discussions on the state of vocational training and its needs for improvement in the light of evaluation results and acquired experiences. In this report we bring out central strengths and weaknesses on the basis of the evaluation results. Behind the results are the main aims and variables defined in legislation, educational policy-related documents and the national principles for teaching plans and examinations.

#### **2 FOCAL POINTS OF VOCATIONAL TRAINING EVALUATION RESULTS**

Evaluations of vocational training focus on the initial vocational education, apprenticeship training, further vocational qualifications, training related to specialist vocational qualifications and special teaching received by young people and adults. The production of evaluation data focuses on producing information that describes the skills of the educational system in meeting the targets set for it. Assessment data is available on efficiency, effectiveness and economy. The evaluation of different fields use similar methods and indicators, in order to facilitate comparisons between fields.

Between 1995 and 2001, evaluations of vocational training were carried out on the following courses:

- Evaluation of training in Crafts and Applied Arts
- Evaluation of training in Travel, Catering and Home Economics
- Evaluation of training in Machinery and Metallurgy as well as Electrical Engineering
- Evaluation of the initial stage of Practical Nurse Training (Carer Training)
- Evaluation of Forestry
- Evaluation of Business and Management (report to be published in autumn 2002)
- Learning results in Mathematics
- Learning results in natural science
- Learning results in the native language (Finnish or Swedish)
- Learning results in languages
- Special teaching
- Language teaching and needs for improvement

In addition to producing the national evaluation data, since 1994<sup>1</sup> the National Board of Education has supported self-evaluation projects carried out by the organiser of education, and developed methods and procedures to improve quality management procedures in vocational training. This has been done through various kinds of projects, long-term training programmes, good practice guidelines and written documentation. The development of quality management procedures is supported through national quality management recommendations for vocational and apprenticeship training and by the development of various methods such as evaluation models and indicators especially in order to support the self-evaluation of educational establishments.

## **3 RESULTS**

This chapter examines the results of evaluations and pilots by theme. The beginning of the chapter concentrates on effectiveness (learning results), after which it focuses on the operations of educational establishments and on the viewpoints related to different themes. The evaluation of economy is limited to the effectiveness and cost-efficiency of the financing system.

### **3.1 Learning results**

The aim of vocational training is that graduates have acquired the knowledge and skills required by their chosen profession and are ready to practise the profession independently. The extent to which this aim is met is appraised

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<sup>1</sup> Räsänen, A. and Vainio, L., 1996: "Etsi laatu itsestäsi – arviointikäytäntöjä," "Find the Quality Within Yourself: Assessment Procedures," *Arviointi 12/1996*. Helsinki: National Board of Education.

through learning result evaluations projects. In this context, learning results are examined from the point of view both of professional skills and of results achieved in subjects common to all students.

## **PROFESSIONAL SKILLS**

The national examination-based evaluations carried out on all courses up to now have examined students' skills in their professions. Learning results were evaluate with national examinations lasting around one week, which evaluated knowledge-based and practical skills in all courses except Care and Nursing and Forestry. Only written tests were used for the Social Services and Health Care and Forestry sector. Since then, evaluations on Forestry have focused on the new vocational training sector Forestry Engineering.

### **Main areas of improvement**

- Clarifying the targets of curriculum and making them more realistic
- Integrating criterion-based assessment in educational establishments and developing an assessment tradition
- Minimising the differences between learning results
- Strengthening learning levels in the basics of each profession
- Creating quality assurance procedures to guarantee that students receive teaching that is in accordance with the curriculum.

### **Main results**

- **Levels of learning.** Looking at the evaluation in general terms, students achieved the professional targets set in curriculum well or very well. Only some students' performance reached the excellent level<sup>2</sup>. Fairly significant differences appear between fields, and differences between examinations and between vocational institutions are clear on all fields. Some fields show higher levels of incompetence in the basic knowledge and skills required for the profession.
- The students' learning levels showed fairly big lapses in terms of the aims of the curriculum, and learning levels also seemed to depend on the field. Students of Crafts and Applied Arts had good basic knowledge and skills in their chosen professions. The strengths of those students' skills were linked to their handling of the profession, and their weaknesses to finance-related thoughts and actions. Students of Travel, Catering and Home Economics managed the knowledge set out in the teaching plan well, generally, but working environments judged those students' skills to be notably weaker than the level estimated by the students themselves or their teachers. The strengths of these students' skills were linked to customer services and cooperation, and their weaknesses especially to written communication.

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<sup>2</sup> Within Finnish verbal grades, a result of 90% or above is equivalent to the grade 'commendable,' between 80 and 90% is equivalent to 'excellent,' 70 to 80 is 'very good,' 60-70 is 'good,' 50-60 is 'average,' 40-50 is 'adequate' and below 40 is 'poor.'

- Students on the Machinery and Metal Technology sector and the Electrical Engineering course had good skills in the use of machines and equipment, especially within information technology. These students' weaknesses lay in basic technical skills, project management, work planning and independent working according to plans and schedules. Success in the final examination on the Forestry sector was modest. Students displayed failings especially in planning. Students who had completed the basic qualification for the Social Services and Health Care sector (the Practical Nurse qualification) did not wholly meet the targets set in teaching plans, and their results were rather poor. These students managed best skills related to reciprocity and ethics as well as supporting and directing personal development. Their weaknesses were in rehabilitation and basic care.
- During their basic vocational training, students did not meet the targets related to independent practising of their professions. This was reflected as poor results in skills related to entrepreneurship, financial know-how, independence, planning and the management of projects as a whole. Skills related to entrepreneurship (productive and economic operation) were weak on all sector.
- **The direction offered by curriculums.** The national principles given for curriculums direct the teaching in educational establishments adequately but not thoroughly. One part of institutions does not teach all the sections of the curriculums content, or do teach them but very superficially. Not all the organiser of education have ensured that their institutions follow the national curriculums principles any more than they check that the written teaching plans are complied with in practice. Some establishments carry out their teaching in ways that clearly depart from the national curriculums principles.
- **The assessment of learning.** The various vocational institutions develop criterion-based assessment methods in rather varied ways. Teachers and others who took part in assessment procedures interpreted the teaching plans' targets, content, assessment bases and criteria and the students' learning levels in very different ways. They also had great difficulties in making criterion-based assessments. The differences between assessors, as those between institutions, are large, which means that errors arising from the assessors are strongly reflected in the learning results. The assessment methods adopted by the institutions are in the background and affect the reliability of the assessment as well as the interpretations of behaviour and results. There are very significant differences between different vocational institutions' assessment practices.
- **Background variables.** Many variables affect learning results. The most positive effects are related to the institutions' connections to working life and the teachers' knowledge of the requirements of working life, as well as

to the students' preparation for acquiring a job and to the institutions' management environments. Positive links are also related to the teachers' competence and work experience, the popularity of the profession or field and the background training and age of the students, although field-specific differences did appear. In general mature students and those who had completed high school<sup>3</sup> achieved better results than others. On the other hand the premises, equipment and machinery, financial resources or decline in them and investments of an establishment, the teachers' age and experience or knowledge of the profession, and the time at which teachers had received their own qualifications did not appear to have positive effects on learning results. The significance of the links of an institution's size and location with its learning results varied greatly between fields.

## **STUDIES COMMON TO ALL STUDENTS**

Evaluations of studies general subjects focused on skills in the students' native language (Finnish or Swedish), natural science, mathematics and foreign languages.

### **Main areas of improvement**

- Making the integration of the studies and professional training common to all students more effective
- Promoting the motivation of students to learn in the studies common to all
- Generally improving the result levels
- Reducing the size of differences between fields.

### **Main results**

- The studies common to all students were fairly poorly integrated into the students' professional training. Despite what is said in the targets of the national curriculum, most institutions make very clear divisions between common and professional studies.
- **Level of learning.** In all subjects students met the targets set for mathematics and natural science to either a good or average standard. Not all students have acquired basic skills in mathematics (which form one third of the teaching in this subject) to the level specified in the curriculum, and these students' skills in mathematics are not advanced enough for the promotion of professional learning. Students' skills in maths and natural science were fairly scattered: things were known individually, as pieces separate from the topic they relate to. Simple formulae, names and abbreviations were too much for a large part of students.

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3 'Lukio,' Finnish baccalaureate corresponding to the final three years of school, taught to students aged between 16 and 19.

- In general students reached fairly good standards in English (target level 2), but their results in other languages were weaker. Almost all students had reached the expected standards in reading comprehension and grammar in their chosen languages. Their weaknesses lay in oral and written communication.
- Teachers rated students' language skills higher than the students themselves. Over half the students thought that their skills were good enough for reading professional guidelines and articles. More demanding situations where language use was required were not handled well in general by training leavers.
- Results in studies common to all showed great field-specific variations. The students' language skills varied depending on the profession studied, the student's age, the students' previous success in language studies and their attitudes towards learning languages. Male students did better in mathematics, chemistry and physics, and female students in their first and foreign languages. Students of Business and Management and Cultural Studies did better in almost all the evaluations languages than the rest of the students. The weakest language skills were those of Travel, Catering and Home Economics students. Students' skills were also related to the popularity of their field (as expressed by the number of applicants).
- Skills in written communication were especially poor on the Travel, Catering and Home Economics, Machinery and Metal Technology and Electrical Engineering sector.

## 3.2 QUALITY AND TARGET-ORIENTATION OF TEACHING

The evaluation of the quality and target-orientation of teaching is based on the extent to which the national principles of curriculum have directed the creation of individual teaching plans within institutions, and the extent to which the organisation of teaching supports the meeting of national curriculum targets.

### **Main areas of improvement**

- Lengthening the cycles of curriculum reforms so that institutions are actually able to implement them and receive proper experiences of them
- Improving the curriculum drawn up by institutions to correspond to national principles, and checking the quality of curriculum
- Increasing the level of involvement of potential employers and students in the creation of curriculum and operational reforms
- Developing individual curriculum
- Developing, establishing and making permanent a student-centred operation and teaching tradition
- Developing teaching environments in accordance with the establishment's vision of teaching

- Creating and establishing cooperation between vocational colleges and high schools, learning from their good practice codes and making it possible for vocational trainees to take high-school studies
- Improving the integration of different subjects, and extending the practices that support this (e.g. team-based teaching)
- Improving the bases, methods and criteria of student assessment. Guaranteeing the availability choices made by students in optional subjects
- Developing levels of coordination of studies and assuring their quality
- Developing student care services according to the changing needs of students
- Examining teachers' work and strengthening practices that promote learning.

### **Main results**

- **Curriculums.** Vocational institutions are very active in developing curriculums. However, during the evaluation period, institutions had to create several different curriculum, which made the organisers to some extent fed up, and caused them not to comply with constant curriculums changes. Some institutions create curriculums in teams consisting of teachers and representatives of the profession in working life; in others it is the teachers who create curriculums as a group, sometimes even as individuals. In some institutions national plans are adapted according to the needs of the area, but some institutions' plans clearly show signs of direct copying of national plans. A part of curriculums plans does not correspond to national principles in terms of either structure, teaching content or criteria. There are quite significant differences between the aims, contents and interpretations of the organisational principles of education of different institution, as well as in the ways of creating and following curriculums and their principles.
- In some places the needs of the working environment are taken into account very well, where as in other cases great problems are apparent. Representatives of the working environment take part in the creating of institutions' curriculums very irregularly. Not all institutions have systematically analysed the local characteristics of working life or adopted them as starting points for their curriculums. Therefore plans do not correspond to all the requirements of employment. Nor do students take enough part in the creation of curriculums. Students and employers alike have little knowledge of the institutions' curriculums as a whole. There are also great differences curriculums plans. Only on some fields do students have access to the curriculums that apply to them. Students do not get to see curriculum in all institutions even after asking for them.
- **Teaching methods.** With curriculum reforms, the focus of vocational training has shifted from teacher-directed studies to student- and learning-centred methods. Even though institutions do modify their teaching methods according to this aim, the set targets have not been met. The teaching is largely teacher-based, and implemented through traditional methods. Pedagogic reforms are carried out rather unevenly in different

institutions. Some institutions do not set clear targets or choose strategies for pedagogic reforms, and updates and changes become the responsibility of individual departments and teachers. In most institutions pedagogic reforms are not supported systematically with such measures as improvement projects, management practices or long-term teacher training, whereas one part of institutions has so many development projects and training schemes that they obstruct the proper organisation of teaching according to curriculum.

- Great field- and institution-specific differences exist in the implementation of independent study. On some fields and in some institutions independent study is well planned, target-oriented and well directed, whereas in some institutions there was no independent study at all. For instance the number of tutorials has systematically been reduced for some fields and in some institutions and independent study through work done in groups and teams or at home does not exist. This has increased the amount of free time for students. Teachers often explain the nonexistence of independent study with their interpretations and experiences of students' poor study skills, and by saying students are not used to self-management or to the use of teaching and study methods that involve the students themselves. The remuneration system used for teachers is also considered to be an obstacle for the organisation of independent study and its management. Many students do wish independent study methods were increased; many also hope the standards of teaching and studying will be raised, as some students see this as something which would increase their motivation for studying. Many students also wished for improvements in the teaching of professional theory. Evaluations showed that opportunities for target-oriented and coordinated independent study had good effects on learning levels.
- Despite the negative issues mentioned above, teaching on all fields has developed in the direction of student- and learning-centredness. The differences between institutions and fields were still great, however. Teaching methods have become more varied in general, and alternative ways of organising training have also increased in number. In spite of this development, all fields need to invest in the use of methods that promote students' initiative, independence, sociability and learning, and in making these ways of operating permanent. The achievement of this target can be promoted for instance with the use of teacher training and reform projects that develop the pedagogic tradition of the institution, and in some cases with learning methods. In addition it is necessary to invest in the evaluation and examination of the effectiveness of these reform measures.
- Practices of evidence-based self-evaluation of teachers' work are very rare in vocational institutions. Another problem is that the results of different experiments and reform projects are not distributed or made use of very effectively or systematically in the institutions. This means that operational

models by which use is made of learning from the activities of others and of oneself are not systematically in use. Nor do the institutions make permanent habits of learning from the good practices of other institutions.

- **Optional subjects.** In general, the vocational institutions evaluational implemented the teaching of optional subjects according to the principles of curriculums. Often this is done rather mechanically, so that students are unable to make individual choices. Although the country has 'optional subject pools' common to all institutions, there is not a great deal of cooperation in the organisation of optional subjects. This is indicated by the fact that students very rarely choose to take optional subjects in any institution other than their own. Small institutions also have problems in organising optional studies in accordance with curriculums. Factors making the organisation of optional studies difficult are related for instance to financial resources, timetable scheduling, attitudes, study management and the students' unwillingness to study in institutions other than their own. According to teachers, optional subjects have in some ways narrowed down professional studies. Not all institutions offer professional training in the form of optional studies.
- **Cooperation with high schools.** In addition to optional studies, one part of institutions organises teaching related to vocational high schools, and training leading to double qualifications (in both vocational training and high school studies). The organisation of training leading to double qualifications displays great differences between institutions; some have arranged extremely efficient systems for acquiring double qualifications, whereas others show great problems in cooperating with high schools. Many institutions have also seen themselves obliged to change their strategies in order to safeguard and increase their offering of double qualifications, especially due to cooperation problems.
- **Integration.** Professional studies, studies common to all and optional studies are not integrated with each other very well. Factors that exacerbate the lack of integration include subject-related esteem problems (still significant in operating principles), the lack of cooperation between groups of teachers and the extent to which the teaching of different subjects is organised separately.
- Vocational institutions have not tended to internalise the significance and nature of individual curriculums very well. The institutions do create individual curriculums for most students, but this is done fairly mechanically. Individual curriculums often consist of definitions of recognised subjects that the student has completed in the past, their optional subjects and the training that takes place in the workplace. In some institutions individual curriculums are seen as just a list of possible subjects. Differences also exist in who creates these plans; in some institutions it is those who coordinate

studies, and in others it is teachers. Individual curriculums are seldom drawn up together with students.

- **Recognition of past studies.** Great variations exist in practices of recognising earlier the studies and other skills of students. For some fields skills attained previously in the profession are recognised and validated according to the targets of curriculums, but not for all. Even though previous studies are validated quite well on a lot of fields, they do not often affect the duration of students' studies. They are accounted for with empty spaces in the students' study plans or complemented with supplementary studies that take up the time saved through validated studies. The stage system has, however, increased students' opportunities for speeding up their studies.
- **Division of teaching into stages.** In many institutions, teaching and therefore also learning is divided into stages. This division increases the students' opportunities for choosing the types of studies and the types of schedules they want, as well as improving the possibilities related to choices of other studies. The gradual change to the stage system has created the problem of the fragmentation of whole topics into small pieces, which can prevent the student from receiving a picture of a topic as a whole. If targets are set separately for each separate little fragment, standards seem to rise higher than what is expected of them in the curriculum principles.
- The assessment of students is fairly traditional, i.e. teacher- and examination-centred. Therefore assessment methods did not wholly comply with set targets. According to students, the main problem in assessment was that it was unfair, which was considered a problem also by some teachers.
- Even though student assessment procedures have begun to include varied methods that support learning and involve the student, the use of these methods varies between fields and institutions. For instance students' self-assessment procedures are implemented very patchily, sometimes not at all. Students do not have very good opportunities for evaluating the effect of the teaching and the learning environment on their learning levels and motivation, and therefore they cannot give the teachers proper feedback (except in the case of general polls carried out in institutions as a whole). Some institutions, but not all, have drawn up separate guidelines for student assessment. Even though many institutions define the idea of learning that is behind curriculums and actions, this does not in all cases mean that assessment methods and practices have developed in the same directions. Self-assessment practices are more highly developed on fields where the majority of students are female.
- Field-specific differences appear also in how well students know the principles and criteria of assessment. Here, too, we see similar trends as above in terms of gender. A fairly common problem is the fact that

assessments are carried out as quite small fragments, and not as study entities; a disadvantage in this kind of assessment is the mechanical and strict nature of the awarding of grades, which conflicts with the targets set for qualitative assessments and with the supposedly interpretive nature of assessment. Assessment was not generally seen as motivational or supportive of learning. A further problem in assessment was considered to be its focus more on written tests and disconnected information than on skills actually needed in working life.

- Representatives of the employment world do not see the viewpoint of skills needed in working life as having been given enough emphasis in curriculums and actual teaching. Curriculum, criterion-based assessment and the principles and criteria of assessments are in general considered very difficult. Representatives of working environments are not very aware of the principles of student assessment; this is largely due to the fact that they are not involved in the creation of curriculums on assessment bases and criteria.
- The targets of study coordination have been met with varying degrees of success in vocational training. On some fields, a few students were satisfied with the amount of coordination they received, and a few dissatisfied. The need for coordination has increased for all fields amongst other reasons because of the increase in optional studies. The significance of coordinated studies is marked in professions where training programme choices are made as the actual training progresses.
- In general, the significance of coordinating studies has increased with curriculum reforms, but levels of coordination have not improved according to the needs of the students. The state of the coordination of studies was seen as critical in some evaluations. Partly this is due to the fact that the amount of coordination does not meet needs, and partly to the fact that its content and methods are inappropriate. There are also big differences in responsibility-based relationships: in some institutions the responsibility lies on the shoulders of those who organise studies, and in some on the shoulders of the teachers. The most important factors in the success of study coordination are related to the numbers and competence of the coordinators, to the distribution of responsibilities and to financial resources. On some fields and in some institutions there were no plans for the coordination of studies and no resources had been allocated for it. Quality control measures for the implementation of coordination were not carried out in thorough ways.
- The special requirements for the coordination of studies are related to optional subjects, continuing studies and personal circumstances. The main problems are related to the lack of resources and to unclear targets and work sharing issues. During the recession, many institutions focused cost cuts on coordination, in addition to which responsibility was shifted from

coordinators to teachers. Although this kind of integration also has good effects, students quite often feel that teachers' skills in coordination are fairly poor.

- The need for student support services has greatly increased in recent times. Some organisers of education have increased the number of specialists in student support as well as those of welfare officers, psychologists and study assistants, but some establishments have made hardly any changes. The number and quality of student support services vary greatly between organisers.
- **Language studies.** Students' language studies are directed through so-called traditional choices. Institutions only offer subjects that a majority of students take. There are few opportunities for the study of unusual languages in vocational training. This limiting has led to not all students being able to continue studies of languages begun at schools. Problems were also found in the valuation of language options.
- The aims of language studies were partly found in evaluations to be unclear. Foggy areas were related, amongst other things, to the unidirectional nature of national and institution-specific curriculums, to the integration of vocational studies and to pedagogic principles such as the use of teaching technology, validation, opting out of language studies and the evaluations of language skills. Some institutions created curriculums for language studies, but some did not. The amount of new language teachers needed has grown in recent years due to the retirement of many teachers.

### **3.3 BASE IN AND CONNECTIONS TO WORKING LIFE OF THE TRAINING**

The main aim of vocational training is to be in accordance with working life and developments in it. Various kinds of employment-based operational models have been invested in and created in order to reach this aim.

#### **Main areas of improvement**

- Continued investment in the participation of representatives of working life in curriculums and in the development of institutions' operations
- Improving consultative committees' targets and operational principles, as well as the effectiveness of operations
- Developing a work experience system, and guaranteeing the quality of what the students learn
- Increasing the level of participation of vocational institutions in the development of the working environment
- Maintaining teachers' professional skills at levels that correspond to developments in the employment world

- Evaluating the effectiveness and assuring the quality of the work experience system

### **Main results**

- The models of cooperation of many institutions with representatives of working life have become more varied, and some institutions cooperate with both employers and employees. There are large differences between institutions' cooperation agreements with representatives of working life: some are very active, and others rather passive. Cooperation is in general more common in adult education than in other vocational training.
- **Discussion committees.** Despite the directedness of aims for links with representatives of working life, the links do not wholly comply with the set targets. Discussion committees have been around for a long time, but their operations are still very uneven: in some institutions committees are active, in others they do not even exist, and in a final set they exist formally but are inactive.
- The duties of discussion committees or similar groups emphasise the reciprocal passing of information. Apart from this, the committees take very little part in the planning of institutions' operations or the forecasting of training needs. Nor do representatives of working life take part in creating curriculums, organising training or coordinating final projects. Their participation in student assessment is marked in evidence-based assessments. The lack of cooperation in curriculum indicates the educational establishment-based nature of curriculums. In many cases discussion committees are only shown the finalised curriculums created by the institution. Committee operations emphasise teacher-level cooperation, whereas as a strategic management tool they are fairly ineffective. Many organisers of education lack connections with working life, which would support the education boards and headteachers in strategic management and setting of targets. The level of work with local bodies varies, though forecasting work is sometimes localised.
- In addition to discussion committees, cooperation with representatives of working life takes the form of work experience and apprenticeship-based learning for students. Increases in work-based learning seem to help in meeting the needs in curriculum creation identified by representatives of working life.
- **Work-based learning.** Generally institutions implement curriculums quite closely in this respect. This is indicated by the extent to which work experience and work-based learning plans are implemented. Problems arise from the fact that the content of work experience or work-based learning, and the amount of direction received by the student, do not always meet expectations. The role of teachers within work experience is fairly unclear

and differs by field and institutions. Geographical differences arise partly because differences in income structures cause that the kind of experience hoped for by the student cannot always be organised locally to the institution, and in that institutions do not very often arrange for students to receive experience outside their local areas. As a consequence, some students study in operating environments that do not meet targets. It was feared that increases in work-based learning would cause problems related to the availability of local work experience places, but this has not – according to what has been observed in various professions – happened to a significant extent.

- The employment world plays an important role in the organisation of work-based learning and the direction of students. Even in professions where there were sufficient places, the direction and assessment of students in their work-based learning was inappropriate. It is significant, however, that work-based learning is actively promoted in all professions, as is training for employers in directing students. Institutions have not set very clear quality requirements for the choice and approval of placements.
- **Other types of cooperation with the employment world.** Good connections with working life are also indicated by the fact that some institutions are involved in development projects related to local working life. A part of institutions does not participate actively in work development projects.
- Institutions are aware of the significance of teachers' knowledge of working life, but teachers' involvement with working life and the extent to which they examine its operations is haphazard and varies by institution and field. Because of their lack of knowledge of working life, some teachers' ideas of it and of the skills required in it are not up to date.
- The good and varied connections of an institution with the working environment have positive effects on students' studies and the institutions' results. Work experience or work-based learning gained by students increases their chances of gaining employment, and the good connections of an institution with working life increase the professional skills of its students.
- Quite a lot of customer-related work is done in vocational institutions, but it does not always meet targets. Nor do all students have the opportunity of choosing to do it. Paid customer-related work is all given to 'good' students. Another problem is that when doing work for clients, students do not take part in the whole customer service process (from accepting a job to delivering it to the client).
- The lack of knowledge of representatives of working life with regard to training is greatly due to the lack of common platforms. Representatives of working life did not generally consider their opportunities for participating in training good in local terms.

- **Observation of employment levels.** Institutions do not to a great extent follow the placement of qualified students in employment, or the feedback received from employers regarding the skills produced by the training. According to employers, newly qualified students tend to have basic skills but need improvement in customer relations and teamwork. Training in some professions considered to be too narrow, which means that placements in closely related fields are rare. Partly employers criticised the old-fashioned attitudes, which caused institutions to produce workers whose skills were not up to date. They would like training leavers to have very good basic skills and to be equipped with the ‘correct attitude.’ Skills important in terms of employment, such as entrepreneurship, and those related to financial operations and cost-effectiveness, did not meet the expectations of employers. Neither to an extent did the students’ basic skills.
- **Special issues.** Each field has special issues with regard to work experience and work-based learning. Especially the remuneration system and the requirements of sufficiently consistent and integrated skills related to the Social Services and Health Care profession emphasise the quality requirements for teachers and clinical studies or work-based learning. These quality requirements have not been defined very clearly, which means that training in that profession does not guarantee each student the opportunity of learning the content specified by the curriculum. The evaluations indicated that an especially important problem was hospitals’ negative attitude toward carer students and the failings in students’ healthcare skills that arise from this. According to evaluations, though, this has been improved by extensions in the duration of training.
- The Social Services and Health Care profession also threw up more problems related to the availability of study places than other professions. These problems arose especially because of the attitudes and prejudices related to carer training, the lack of information about this kind of training and the skills of its students, the overloading of institutions, and the practices of the institutions themselves in protecting territories and traditions. The profession has a need for overarching planning and coordination over and above the educational establishment, a reform in remuneration systems, assurances in the quality of medical teaching or work-based learning and generally an examination of the operating principles of the organisations that offer studies in this area. The levels of remuneration in this profession are generally considered to be too high.

## 3.4 SUPPLY AND DEMAND OF TRAINING

The essential changes made to vocational training in the 1990s consisted of the simplification of the maintenance network and the educational management, and the rationalisation of the network of educational institutions. In addition educational organisers were given a lot of responsibilities and powers in the organisation of training and in the direction of training positions according to the needs of the local employment world. The responsibilities of educational organisers in following up on and assessing the training they have organised and in forecasting the needs of education were also increased.

### Main areas of improvement

- Further Developing the maintenance system and the network of vocational institutions
- Making more efficient use of forecasting information that maps the needs and expectations of working life in making decisions about the availability of training
- Continuing to improve students' employment levels

### Main results

- **Obtainability.** The level of obtainability of vocational training is in local terms good. This is made possible by the fact that there are a lot of units that organise training. Even though the number of educational organisers has fallen radically, this has had no great effect on the number of units that organise training. The conclusion we can draw from this is that essential changes have not taken place in the network of institutions that implement vocational training as a consequence of this reform. The changes have up to now signified more the creation of administrative centres and the centralisation of coordination. The number of educational organisers has fallen from 379 to 213.
- The organisers of education carry out forecasting and evaluation work on education in a very varied way. Some of the organisers focus training in a very target-oriented way on the needs of working life, but the organisation of education is directed to a large extent by factors related to the internal operating environment, such as employment structure and employment levels. At a local level the needs of working life are not always taken into account when planning the availability and content of training.
- The observation and evaluation of training and employment levels is not on the whole very systematical. Some organisers do nothing to follow the placement of its students in employment.
- **Supply and demand of training.** The relationship between the supply and demand of training varies by profession and by geographical area. In the Machinery and Metal Technology profession, the workforce did not entirely

correspond to the market; both unemployment and a lack of employees occur at the same time. Reasons given for this were various: some of the qualified students are not suitable for employment, some of them do not want to work and some are unwilling to move to a different area in order to get a job. For example not all the students from the Machinery and Metal Technology and Electrical Engineering fields gained employment due to the lack of local positions.

- The availability of training in Crafts and Applied Arts is not in proportion to the availability of jobs in that area. Too many training positions are offered, especially within the areas of textiles and fashion. The number of students has risen, even though the number of positions has fallen. An excess of positions is found especially in the regions of eastern Finland, Oulu and Lapland. Out of the entrant places offered for training in 2000 and 2001, around one third were considered to be excessive in terms of the availability of jobs in those years. Jobs in the sector are concentrated in the areas around Helsinki and Oulu. Within the profession, stonemasonry, exhibition building, woodworking and model building offer quite good levels of employment. Workers are also needed in product development and marketing.
- The availability of training positions in Travel, Catering and Home Economics is generally good. The growth of demand of these services is reflected in the growing need for training in the sector. Training is concentrated in southern and western Finland, where the need for workforce is also largest. Trainee numbers also correspond fairly well to demand, although not all training places are taken up. The number of applicants for the Home and Catering Economics and Cleaning Services courses has fallen, causing a quarter of training positions to be unfilled. This is caused partly by the negative images of these professions.

### **3.5 OPERATING PROCEDURES AND MANAGEMENT OF VOCATIONAL INSTITUTIONS**

This chapter examines the main issues related to the operating procedures and management of a vocational institution. The aims of the examination include the management of the institutions, their quality management systems, their levels of cooperation with other educational organisations and interest groups, the environments they offer and the training of their staff.

#### **Main areas of improvement**

- Creating strategic procedures that would facilitate the organisation of education at the level of educational organisers and institutions
- Developing the organisation in order to support the meeting of the strategic targets set by the organiser

- Prioritising improvement projects according to strategic targets and aims
- Developing systems to motivate and support the staff of professional training centres
- Boosting the systematic nature of quality management measures and using appropriate quality management methods
- Creating and continuously evaluating self-evaluation systems
- Creating cooperation agreements especially with high schools and other vocational colleges and institutions
- Continuously evaluating and improving the internal environment offered by institutions
- Creating human resources strategies and development plans that support the strategic aims and principles of the organisation

### **Main results**

- **Management.** Management systems have very actively been developed in vocational training, especially due to the changes in educational organisation. Management procedures are still the object of continuous and marked changes.
- The significance of strategic management has become emphasised during the last decade. Through the development of quality management systems, strategic ways of thinking and acting have partly become established. Strategic management has become marked in the definition of the task of education and the directing of training, the taking into account of local needs and in investments. Not all organisers have human resources strategies and these, as other types of strategies, have not very well been integrated with the overarching operating strategy.
- The main problem and management-related challenge of strategic operations lies in how strategic focal points and targets can be adapted in practice. Vocational institutions do not have very systematic ways of defining targets or of carrying out improvement negotiations with operating units or departments. Nor are they very systematic in following up on and evaluating results. These issues are, however, being worked on very actively in some institutions.
- Process-management methods are not very well handled in many institutions, as for example the operating models of pedagogic management vary greatly. Sometimes there is no management of pedagogic operations, as each teacher implements them in the way her or she considers best. A consequence of this is great variations in the quality of teaching. Quality management procedures vary by institution.
- Important reform projects are being carried out on the organisational structure of vocational institutions. Most organisations are in the process of developing teamwork-based operations. This has meant the delegation

to teams of responsibility and power and the decision-making related to these. Also financial powers have been delegated. Despite this fairly common trend, some institutions are moving back from the team-based organisation model to linear organisation.

- One of the main problems in management is the fact that the information systems of the institution and the educational organisers are not up to date. Thus in many organisations the management does not have access to up-to-date information on facts on which to base management decisions.
- Normally the principals of the institutions are responsible for strategic management and the deputy heads for pedagogic operations. In no institution were the power and responsibility relationships entirely clear. Some institutions supported the development of the management system with training, but not all.
- Various development projects have been created to support the operations of vocational institutions, and external funding has been sought for these quite actively. The problem with development projects is that often they are not an integral part of normal operations but 'live their own lives.' The results of development projects are not distributed very effectively, and the practices are not established. Therefore institutions do not learn from their own operations in a very systematical way. The self-examination of operations is not promoted much in vocational training. The ways in which institutions learn from the good practices of other institutions is not systematical either.
- The work of vocational training staff is tiring for many reasons. The extent to which management boards can make support structures available to their staff varies. Incentive and reward systems are not very common.
- **Quality management, evaluation and feedback systems of vocational institutions.** In many cases the management of the institutions defines the quality policies of its organisation and the values, missions and visions related to these. Valuations generally emphasise the importance of student-centredness. This value is not fulfilled in many cases, though: some institutions are committed to student-centred operations whereas some show great failings, even neglect, in terms of their treatment and acknowledgement of students and the fairness of their dealings with them.
- A large part of institutions has no systematical quality management, evaluation or feedback systems for analysing its internal and external operating environments or for directing improvements. Management these aspects are actively being worked on, however, as a result of national quality control measures. Many educational organisers have decided to adopt the European Foundation for Quality Management (EFQM) norms.

- Institutions develop their own operations actively, but this development work and the setting of new targets is not directed by evaluation and follow-up data. Despite this, each institution uses different factors to measure quality. The analysis and use of follow-up information and the comparison of these with other educational sectors is rare.
- Only some institutions observe the placement of their students in employment, but information is not usually made much use of in planning the availability of training and in improving education.
- In addition to these failings in the evaluation system, educational organisers do not in general possess effective forecasting systems. Even though information on working life is acquired through daily cooperation activities, the views expressed by its representatives do not very effectively direct the organisation and development of the training. Operations are directed by factors strongly related to internal operating environments, such as traditions, employment structures, variables of the physical environment and various values, as well as by the requirements of the external operating environment.
- The state of strategic planning carried out by the organisers of vocational training and by the institutions is rather uneven. Some of the organisers have set clear aims and targets and strategies for attaining them, whereas some have done nothing to define their own organisational strategies. Strategic planning is in part obstructed by a lack of forecasting and evaluation data. Also the fact that the organisers' and institutions' targets are not very clear is problematic. Some institutions are entirely lacking in these. Documentation also varies greatly.
- **Cooperation and networking of vocational institutions.** The quantitative and qualitative targets set in legislation regarding cooperation between different professions and types of institutions have not yet been met in vocational training. Cooperation practices and the results received differ greatly between institutions and organisers. The need for cooperation is marked in small institutions.
- Some institutions develop cooperation practices together with high schools. Some organisers have created good bases for cooperation and also achieved good results, but most are battling with rather large problems related to the organisation of education and to cooperation. Problems related to practical arrangements are reflected in poorer results. Great opposition to cooperation with high schools is sometimes encountered also from the side of the high schools themselves. In many cases cooperation agreements have become frozen after the end of experiments related to them.

- Even though there is fairly little cooperation between institutions and fields, its levels are being increased and the methods are being developed in many areas on the initiative of educational organisers. Also the level of cooperation between units varies by institution, organiser and field, and are generally very low. Problems are reflected even in the fact that departments in the same institution, working within different aspects of the same field, are not always in close communication. Multidisciplinary activities are also spoken about but the benefits brought by them are fairly little-known, and they are not yet made much use of in the effective development of teaching.
- There is very little cooperation with vocational training colleges, often not at all.
- **The institutions' environments.** The environments offered by institutions vary by field and by institution. Good and bad environments seem to have cumulative effects. The most eager principals, teachers and students are all found in the same institutions.
- The continuous changes in vocational training have affected the environments of institutions, as well as teachers' energy levels and motivation. The large and continuous organisational changes implemented also at a local level have negatively affected environments, work enjoyment and motivation.
- According to students, the environments of institutions should be improved by making them more student-centred. On some fields students had worse opinions of the environment than the teachers. According to students, headteachers and teachers are not always interested in the students' studies and not nearly in all institutions do the students have the opportunity to affect the issues related to their studies such as curriculum or systems. The activities of student unions are fairly limited and ineffective.
- In many institutions environments are regularly analysed and their development is observed through analysis of staff numbers. On the other hand there are institutions where no attention is paid to the environment at all, and those where the situation of the working and learning environment was critical at the time of assessment.
- The valuation of the work of staff who work in vocational training has a significant effect on the environment and motivation of an organisation. The valuation of education also varied by institutions and field. The development and independence of vocational colleges from basic vocational training has in some areas had a negative and critical effect on the motivation of both staff and students.
- Vocational institutions operate more on the demands of the teachers of vocational subjects than as a balanced account of all viewpoints.

- The management of human resources is carried out very differently in different institutions and fields. Some educational organisers have created human resources management strategies and training projects or plans, but this is lacking from a large part of organisers.
- The amount of teachers needed will experience a marked growth in the future due to the retirement of existing staff. The need for the basic training of teachers will be emphasised due to this especially within Machinery and Metal Technology and Travel, Catering and Home Economics. These age-related problems do not appear on the Crafts and Applied Arts and Social Services and Health Care sectors, which means that their focus lies on the guaranteeing of continued training for their staff. The need for teachers in Forestry, on the other hand, seemed to be falling. In addition specialist teachers are needed for some courses, including those in travel-related subjects within Travel, Catering and Home Economics. Teachers who specialise in teaching and directing students with special needs are also needed.
- Educational organisers do not systematically make teachers responsible for acquiring expertise in pedagogics.
- The number of teachers with formal competence varied by field. On the Travel, Catering and Home Economics field almost all teachers were formally competent, and they had long-term experience of teaching. Those teachers, on the other hand, very rarely or never took part in continued training. One fifth of teachers in Crafts and Applied Arts did not have formal competence, but in that area the teachers took further training courses quite often.
- The professional skills of teachers in Machinery and Metal Technology and Electrical Engineering did not correspond to targets set in working life or in curriculum. Problems were found especially within pedagogic and language skills. Teachers in those fields did, however, have long-term experience of teaching. Assessments showed a lack of teachers especially in information technology.
- Teachers' knowledge of working life was poor in all areas, and not all teachers' professional skills met the requirements of working life. In general we can observe that teachers have experience in their professions, but in many cases it was acquired a long time ago. Teachers' acquainting themselves with the employment world has become in many ways more difficult since separate funding was removed from the budget and responsibility for this was transferred to the educational organisers. Only a small amount of teachers has been able to work in his or her profession within the last few years. The increase in work-based learning schemes is expected to improve also teachers' knowledge of working life.

- Failings were also apparent in the skills and professionalism of teachers in the subjects common to all students, especially within their handling of professional pedagogics. Out of teachers of the mother tongues, one third were lacking in formal competence. The number of mathematics teachers' positions has been reduced and institutions had recruited school teachers or teachers who lacked didactic competence. In natural science, some of the teachers had not internalised the significance of physics, chemistry and biology as a general object of education or in professional terms. Many teachers lacked deep knowledge of vocational training and of the needs of the professions. They found it difficult to relate the knowledge of their subjects to skills needed in the professions and therefore to vocational training. This reflects the need for integration between professional studies and studies common to all students.
- Teachers take part in further training within their institutions generally according to their own needs and not so much according to strategies and plans approved by the educational organiser. The training is focused on participation in individual training events that deal especially with the content of education. Few institutions have training plans for which the organiser has identified the focal points in which teachers' professional skills need development. Teachers take part less in training related to pedagogic issues than in that related to content. The teachers' training needs are related to the content and pedagogics of the profession, their knowledge of working life and of the operation and cooperation of the working community, their work cooperating with employers to increase skills in their professions, and their meetings and teaching of different students. Problems related to tiredness and coping were fairly significant. Teachers emphasised the fact that they are often left alone with their problems.

### **3.6 MATERIAL RESOURCES**

The evaluation of professional resources has so far focused especially on the institutions' physical operating environments (such as premises, equipment and machinery), as well as on materials available for use and the relation of these to the curriculum.

#### **Main areas of improvement**

- Developing investment strategies and plans in accordance with the needs of the future
- Boosting cooperation agreements related to investments in vocational institutions
- Developing the physical operating environment to be in accordance with the pedagogic requirements of curriculum
- Developing library and information services

## **Main results**

- The premises, machinery and equipment of the vocational institutions corresponded fairly well to the targets set for training, though certain problems were related to investment and use. The habits of use of the physical environment also varied by field.
- The availability and up-to-date nature of IT systems varied. For technical fields such as Machinery and Metal Technology, Electrical Engineering and Forestry, IT systems and information networks were good, whereas for instance in Crafts and Applied Arts this was not the case. Also in Travel, Catering and Home Economics the systems were modern but they were not used very efficiently.
- The premises and equipment used for language teaching were quite good. On the other hand materials used for language teaching did not wholly correspond to the targets of the curriculum.
- The equipment used in Machinery and Metal Technology, Electrical Engineering and Forestry were considered to be sufficient at the time of evaluation, but it was foreseen that a need for investment would arise in future years that would not be possible to meet in the opinions of all organisers. Not all institutions have examined very systematically the need for cooperation with the employment world in terms of investment, or the effects of work-based learning on their investment needs.
- With curriculum reforms, training has begun to focus on students' independent study. This is not very effectively promoted, however, e.g. with the use of libraries. Libraries and information services were lacking in many aspects. Some institutions had no library or information service of any sort, and often the materials of existing libraries were out of date. This failing has in many ways been complemented by vocational colleges located in connection with the institutions. In future the networking of vocational institutions and colleges may relieve the current lack of libraries. Problems are also related to the fact that libraries are not used very effectively and students are not required to complete tasks independently.
- Some institutions have developed curriculums by taking into account the changes that have taken place in ideas on learning. Although these changes have been seen as causing modifications to teaching practices, few institutions have managed to improve physical operating environments on the basis of this.

## 3.7 COST OF TRAINING

Financial evaluations carried out in the assessed period focused mainly on the effects of the saving measures implemented in the period, the effectiveness of the funding system, the development of financial resources and the structure of expenses.

### **Main areas of improvement**

- The development of a funding system for vocational training which will support the reaching of targets related to the effectiveness of the training.

### **Main results**

- In general the effects of saving measures on the organisation or quality of teaching were considered to be small. According to the teachers of some vocational institutions, saving measures worsened the standards of the training, whereas according to others they improved them. Similarly in the opinion of students, the saving measures of some institutions were not reflected in operations whereas for others they were reflected in all aspects of them. At best, saving measures did not affect the roles of staff; at worst, institutions had to use discharges and redundancies.
- The development of expenses was different for each field. The total expenses for Crafts and Applied Arts fell between 1995 and 1997, and at the same time the number of students fell by 3%. The average expenses per student in 1997 were FIM 42,200 (actual expenses per student ranging between FIM 33,500 and 75,000). Costs per department for this field accounted for around 90% of the expenses, which is equivalent to the average levels for vocational institutions. When looking at the cost per student, the efficiency of the operations has increased especially in the provision of support services. Despite this increase, the total expenses per student were around one third higher than in the institutions as a whole.
- Administrative and teaching costs have risen in Crafts and Applied Arts. Great variations by training department in costs and their structure are typical of this field. The variations in cost are related to the number of training fields offered per number of applicants and the operational differences that depend on the number and nature of each specific area.
- Total expenses for Travel, Catering and Home Economics training rose between 1997 and 1999. Also expenses per student on this field rose by 9% after 1997. The average cost per student for 1998 was around FIM 35,000 (ranging between FIM 24,200 and FIM 80,000). The reasons for the highest expenses were the high costs of teaching and support services and those of property and administration, which were higher than for other fields.

- Independent training units are more efficient in their organisation of training than other organisers. Training is most expensive in municipal group units, but the differences between educational organisers are quite small. The biggest differences were in costs related to property and administration. The costs were lowest in units that only teach one field.
- The main problems for funding the Machinery and Metal Technology and Electrical Engineering fields were seen to be their excessive dependence on student numbers, the changes in funding systems and the saving measures taken by the government and the municipalities.
- The total investment of the society in Forestry training has slightly fallen since 1990, though the expenses per student were higher than on other fields between 1990 and 1994. This difference was not apparent within student support and administration costs, though. The biggest differences between this field and others were in accommodation and student support costs. Between 1990 and 1994 the total expenses for this field stayed the same or rose. The proportion accounted for by student support, accommodation and property costs fell, whereas the proportion of teaching grew.

### **3.8 SPECIAL TEACHING**

Training for students with special teaching or support needs should be given as special teaching. In special teaching, institutions should draw up an individual study plan (ISP) for each student, and the educational organisers must take care of coordinating the special teaching, the coaching and rehabilitation linked to it, and the related development, direction and support activities.

#### **Main areas of improvement**

- Guaranteeing students with special needs more variety in their opportunities in choosing professions and training
- Increasing the opportunities for these students for studying in a variety of different institutions
- Further improving the central development services for students with special needs
- Taking into account the needs of special teaching in the management of human resources

#### **Main results**

- The number of students in need of special support has grown on all fields. Educational organisers have increased the amount of services directed at students with special needs, though field and organisation-specific differences do exist. Some organisations support the development of special teaching with separate development projects.

- The offering of special vocational teaching is still fairly one-dimensional and students with special needs are currently directed mainly towards traditional professions and those professions for which there are few applicants. Despite general increases in the numbers of training places offered, the opportunities for choice of these students have not improved.
- Though special vocational institutions have sought to find new professions appropriate for students with special needs, it has not been easy for them to start up training in them. The main obstacles have been the institutions' existing staff's skills, structure and attitudes. Evaluations that looked at the subdivisions of these institutions showed notable need for training staff in special teaching. In addition they emphasised a need for specialists and assistants (in the form for example of classroom assistants or student supporters).
- The transfer of students with special needs from schools to vocational training is fairly problematic due to the support and direction needed and received by the students. This was affected especially by problems in information flow between different stages of their education. To promote the study of these students in vocational institutions, many organisers have increased the amount of coaching-style teaching they offer.
- The curriculum system and the curriculums themselves give good starting points for the implementation of individual study plans and for the flexibility of study. Teachers consider the differences between good and bad students to have grown in the last few years, which signifies a need for individual study programmes.
- The individualisation of teaching was not implemented according to targets, however. The opportunities exist for separating and individualising students, but the organisation is obstructed by a lack of resources, by the large size of classes and by a fear of the unfulfilment of the curriculum.
- Failings exist in the level of cooperation done with different sectors (e.g. those related to rehabilitation). Vocational institutions did not make much use of the central development services offered by special vocational institutions or of other external aids. Special vocational institutions do not therefore operate efficiently as specialist organisations.
- The duration of special teaching is around the same as that of other teaching. Opportunities for varying the duration of training are hardly ever made use of.
- The percentage of students receiving adaptive teaching who withdraw from their studies is slightly higher than that of other students withdrawing from their studies. On the other hand the danger of withdrawal for students receiving unadaptive teaching is four times that of other students.

- Over 80% of the main specialist teachers of vocational institutions are qualified. Almost all the teachers in special teaching in special and vocational institutions meet the required standards. On the other, hand teachers do not have skills for diagnosing and supporting reading and writing problems. There are few teachers for dyslexic students. Another problem is the fact that not all institutions with students with special needs have employees who are qualified to give special teaching.
- The aim of special teaching is to give students independence and life skills at the same time as teaching them the necessary professional skills. Evaluations indicate that these aims have been fulfilled. At the time of evaluation the organisations did not have proper systems for following the placements in employment of their special students.
- The levels of employment for students with special needs seem similar to those of other students. A significant proportion of them finds employment on the open market. Work experience programmes have significantly increased opportunities for employment. Obstacles for organising work experience programmes exist in teachers' schedules and lack of connections with the employment world.
- The learning results of students with special needs were assessed with a final test whose targets and guidelines were possible to adjust to meet the needs of each student. The results of students with special needs were weaker on all fields than those of other students. Only in Crafts and Applied Arts did students with special needs do quite well in the final test. In Travel, Catering and Home Economics, the learning results of students with special needs were worse than others' in all subjects. According to teachers' evaluations, not all of these students gain employment. Mentally disabled students have good levels of employment, as do those who followed an adaptive study plan. Also in Machinery and Metal Technology as well as Electrical Engineering, the results of students with special needs were weaker than others'.
- The need for organisation of special teaching was marked in Machinery and Metallurgy, Home and Catering Economics and Cleaning Services.

### 3.9 SPECIAL CHARACTERISTICS OF APPRENTICESHIPS

Evaluations of apprenticeship-based training focus on management and supervision as well as levels of acceptance of applicants to apprenticeships, the creation of individual study plans for students, the payment of social benefits and educational grants, the propriety of the employer as an apprenticeship teacher and the possibility of organising competence-based assessment procedures.

#### **Main areas of improvement**

- Increasing the level of knowledge regarding apprenticeships, e.g. by creating a system of information which will support students' reaching their targets
- Integrating information-based teaching and work-based learning

#### **Main results**

- The availability of apprenticeships is good. Generally apprenticeship-based teaching has become concentrated in the areas where the need for workforce is the greatest. The professional and income-related structures of the areas also affect the fact that apprenticeships cannot be used on all fields. An example could be the Crafts and Applied Arts course, for which few apprenticeship places exist.
- One major problem is the lack of management of apprenticeship-based training as a whole, which makes it difficult to meet targets. The deficiencies are related to poor knowledge of the targets and of the availability of apprenticeships, poor knowledge of the requirements of the work, a lack of cooperation between parties and a lack of integration between information- and apprenticeship-based learning.
- Those working in vocational training do not know enough about the opportunities offered by apprenticeship training or about its systems, roles, positions or practices. The institutions are also ignorant of actual working life. Few educational organisers have clear and integrated visions of apprenticeship training.
- Despite good levels of cooperation between different sectors, fairly big integration problems appear in apprenticeship-based training. Information-based teaching and learning at work are usually quite far apart from each other. Local administration officers and representatives of working life estimate that the information-based teaching given in the institutions is not linked to the type of learning that takes place at work. Deficiencies exist also in information sharing regarding apprenticeships and in the creation of each student's study plan.

- The skills of both information-based teachers and workplace trainers are not always sufficient for the planning, implementation and evaluation of individual study plans.
- The quality of apprenticeship work is not always high, and the work is not always appropriate to the targets of the training or the requirements of good learning environments. Problems arise especially when there are no opportunities in the workplace for learning all the skills required for the profession. Some students would need to practise in various different workplaces but this is not always possible.

### **3.10 SPECIAL CHARACTERISTICS OF ADULT EDUCATION**

The evaluations of adult education have focused on the organisational aspects of the teaching and the effectiveness of the examination system.

#### **Main areas of improvement**

- Organising adult education so that it takes into account the expectations and needs of mature students and the requirements of the adult education system
- Developing curriculum systems and boosting the participation of students in the creation of curriculums (including individual ones) and in study planning. Improving levels of convalidation.
- Changing the role of the teacher from someone who gives out information to someone who directs learning, plans learning events and supports students.
- Ensuring the efficiency of competence-based examination system

#### **Main results**

- The adult education system is actively being developed, but the development is uneven, varying by profession and educational organiser. The main problems are related to adult education strategies, the acknowledgement of the needs of working life, the taking into account of students as individuals and the use of evidence.
- Some educational organisers have strategies and plans for organising adult education, and some don't. At a local level, overlapping appears to be a problem in organising these studies and competition exists between organisations. The image received of adult education is fairly inconsistent.
- The organisation of initial vocational training for adults does not implement all the principles of adult education. Training that prepares mature students for basic examinations is organised largely in the same ways as that for young students. Also the requirements of students' skills vary; in some organisations the requirements of the initial vocational qualifications do not meet the national examination quality requirements, whereas in others

the standard is that of further vocational qualifications and specialist vocational qualifications.

- The creation of individual study plans is not established in any profession. Not all students receive individual study plans. In addition the plans that are made are often made quite mechanically. Students are not aware of the principles of individual curriculums, which means that they are not able to demand their own plans. In many cases curriculums are drawn up on the teachers' initiative, which means that the students' own targets, circumstances, alternative study methods and opportunities for independent study are not taken into account. Validation of previous studies does not always take place, either.
- The teachers' skills in adult education have been improved, but as a whole they are still insufficient. Failings are apparent in the teacher's knowledge of the area, their training and their knowledge of the employment world. Employers have not become acquainted enough with the competence-based examination system.
- The skills of vocational institutions and adult learning centres in organising training that prepares students for examinations vary greatly. The differences seem to be related to the institutions' management and their teacher's motivation levels.
- Vocational qualifications are in general not well known or appreciated. More information sharing is necessary to make the qualifications better known. This is an important challenge for training units and qualification committees to take up.
- Not all training units and qualification committees are aware of the requirements or mechanisms of qualification systems, and not all fields have made their qualification committees knowledgeable enough of their tasks. Teachers and qualification committees do not always have specialist knowledge in the area.
- The number of students taking examinations varies by profession. Not all of those who have taken part in training take the examination and receive the qualification they were aiming for. Reasons for this are the lack of motivation of students and the lack of significance of the qualification in terms of employment. Other reasons are excessively high standards and problems related to the organisation of an examination event.
- Within Travel, Catering and Home Economics, the availability of adult training places is good. This availability is concentrated in southern and western Finland, the areas which also have the highest demands for workforce in the profession. The number of competence-based examinations has

experienced a marked growth in recent years, and plenty of examinations were taken. Around one third of students in training took the examination or part of it. Those who had received further vocational qualifications or specialist vocational qualifications gained good employment.

- Within Machinery and Metallurgy and Electrical Engineering the network of adult education is thorough in terms of quantity and geography. Not enough competence-based examinations had been organised with regard to the number of students. Those paying for training were not wholly committed to operations according to vocational qualification legislation. Vocational qualifications are not known or appreciated enough in the employment world.
- In Crafts and Applied Arts, no conclusions could be drawn regarding the supply and demand of further vocational qualifications and specialist vocational qualifications, as the bases of the examinations had only been valid for a short time and no one had taken the examinations yet. The number qualifications are expected to remain low due to the small size of the professions.

### **3.11 TRAINING IN SWEDISH**

Training in Swedish was evaluated in the same way as that in Finnish. Results and needs for development were largely the same as in training in Finnish, so in this chapter we will only bring up special differentiating characteristics.

#### **Main areas of improvement**

- Ensuring the teacher's professional, employment-based skills
- Improving libraries, information services and teaching materials
- Improving the cost-efficiency of the training
- Guaranteeing the variety of options for students

#### **Main results**

- The quantitative offering of vocational training is thoroughly appropriate to needs, and the availability of training is good. Students' levels of placement in employment once qualified are also good. In some professions, students taking fields in Swedish are less likely to withdraw from their studies than those in Finnish education.
- The professional and language-based skills of students are almost everywhere better than those of students from training in Finnish.
- Educational organisers develop the training and their own operations actively, on some fields more actively than in training in Finnish, though field-specific differences do occur. The learning environments offered by

the organisations are also good, which improves students' levels of enjoyment. These levels of enjoyment are affected partly by the desire for improvement and partly by the size of the organisations. On many fields Swedish-speaking students were found to be more critical than their Finnish-speaking counterparts.

- The skills of teachers and the developments in professionalism were slightly different in training in Swedish. Swedish-speaking teachers lack teacher training more often than Finnish-speaking ones do. In addition, Swedish-speaking teachers have less opportunities in some professions for becoming acquainted with working life and further training than Finnish-speaking ones.
- It was fairly common for Swedish-speaking institutions to have greater operating costs than Finnish-speaking ones, although the costs of actual teaching were partly lower in training in Swedish.
- On some fields training in Swedish cannot offer studies as varied as those offered by training in Finnish. Problems with the lack of teaching materials were more marked here than in training in Finnish.

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## **THE OUTCOMES OF THE ADULT EDUCATION SYSTEM IN THE LIGHT OF EVALUATIONS**

### **1. INTRODUCTION**

The evaluation of adult education started as early as in 1995, with the evaluation of the adult education centre system. Of the organisations of liberal adult education, study centres have been evaluated more recently, and folk high schools are being evaluated at present. Theme evaluation subjects have included adults' language skills and the pedagogy of additional vocational training. Of the systems of vocational adult education and training, the competence-based qualification system has been analysed.

### **2. ADULT EDUCATION CENTRES IN 1995**

The purpose of the evaluation was to provide information on the operations of adult education centres in 1995, and on the changes in it in the early 1990s.

The objectives of adult education centres were analysed based on documents on education politics, compared to common socio-political outlines on education politics, development plans for adult education and, above all, liberal adult education, and statements specifically concerning adult education centres. However, these official documents only included a general wish for the direction of development, and they allowed activity within a certain latitude. The government will was made concrete in specific finance decisions, and in legislation concerning the activity and its financing. These statutes only described the conditions of the activity and its general purpose and content. The legislation of the year 1992 did not include a vision on what the education should aim at.

The material for the evaluation was collected from the national registers of Statistics Finland and the National Board of Education. Based on the national registers, for example, factor analysis could be used to assess the status and development of adult education centres in different provinces. In 1995, there were 277 active adult education centres, and a sample of a little more than 10% was used in the analysis (33 education centres). A questionnaire was given to the students of the sample education centres, regarding their social background and studies. The sample education centres had approximately 68,000 students, and 20,246 students replied to the questionnaire. The questionnaire was given in spring 1995 to those who studied at the education centre during one specific week. In addition, the headmasters, the chairmen of the boards of directors and leading municipal officials in the education sector

were interviewed. Other material included university studies on adult education centres, and other national research material.

The following starting points for the evaluation of the outcomes of adult education centres were emphasised:

- No national criteria of a curriculum or examinations have been confirmed for the education provided. The purpose of the education is not to complete a certain qualification or syllabus
- There is no obligation to offer education in adult education centres
- The scope of the education is not regulated on a national level
- The studies are completely voluntary and require a conscious, personal decision

### **The Results of the Evaluation**

The main result of the evaluation was that the network of adult education centres covered the whole country, and, in practice, it was possible to study at an adult education centre in all Finnish municipalities. Thus, the education centre system offered the Finnish population the basic services for voluntary general studies. However, the economic recession had caused the supply of lessons to decrease by approximately 7% in about five years. The differences between different municipalities and provinces were large in the amount of supply.

Other results include the following:

- The greatest challenge for the education at adult education centres was that about 80% of all lessons were given by part-time teachers,
- However, the teaching corresponded well to the need, since the number of students remained large, in spite of the increases in student fees. There were approximately 640,000 students at adult education centres, which is about 13% of the Finnish population (about 5 million in 1993). This was real evidence of the influence of adult education centres, and requires no opinion polls.
- The fact that many students had kept studying for a long time proves that the teaching is satisfactory, and that the students considered it significant to themselves.
- The adult education centre system realised in an excellent way the EU decision of 1996 on lifelong learning. The students' social background corresponded approximately to the demographic structure of the municipal population, but except that 2/3 of the students were women, the students were more likely to be well educated than others, and they were more often employed in the service sector.

- The operation area of the education centres has expanded, and they have also differentiated from each other. Apparently, some education centres were both in an economic and in an operating crisis, even though a large majority of them operated strongly with good results.

The final conclusion of the report was that large numbers of students alone are not enough to guarantee the credibility of the activity of adult education centres. A more important factor than before will be the definition of the purpose of the activity in relation to the surrounding society and the changes in it, as well as the clarification of target groups and points of emphasis in the education.

Pentti Yrjölä: *Kansalaisopiston tila 1995* (Adult Education Centres in 1995).  
Evaluation 3/96

### 3. THE EVALUATION OF STUDY CENTRES IN 1997

The original target of the evaluation of study centres in 1997 was to analyse the purpose and targets of the activity in each study centre, and to evaluate how well they succeed in reaching the targets. The outcome of the evaluation project was an evaluating review of the position of study centres in the adult education system of our country, and of their results.

Study centres are maintained by national educational organisations. In 1996, there were 11 active study centres. They were subsidised by the state, based on the 1993 Act on Study Centres, and the organisers received a specific discretionary allowance from the national budget.

It became immediately clear at the beginning of the evaluation process that the targets of the study centres and their organisers were so general that the evaluation project could not be realised to evaluate how they were achieved. Target statements are declaration-like expressions of the line of activity, target groups and working methods. The information in the operation plans and reports was quantitative, and it was hard to evaluate the achievement of the targets, defined in the statutes and rules, based on them.

Based on the legislation, the following were determined to form the criteria for national evaluation:

- how the study centres have succeeded to promote education in organisations and communities, and
- how the study centres have succeeded in securing pluralism in Finnish society.

It was difficult to put into operation these criteria in a form that could be easily measured, but evaluation statements can be presented by interpreting the study centre activity in general by utilising the evaluation methods described below, and by analysing the achievement of the targets a specific study centre has set itself. Some evaluation statements are based on criteria, some proportional, comparing study centres to the general change in activity.

The evaluation material used included the basic material of study centres, i.e. their rules, maintenance permits and work programme, regulations and guiding principles, operation plans and reports, budgets and financial statements. Also, the study centres provided the evaluator with different internal documents, analyses and studies. The statistics of the National Board of Education and Statistics Finland were also available. In the 1990s, there were not many university studies completed on study centres.

Qualitative material was collected by interviewing employees and leading elected officials of the study centres. Some significant member or client organisations of the study centres were also interviewed. All in all, there were 66 interviewees.

A student questionnaire was completed in order to analyse the students' social background, their motives for studying and the benefits of studying. 5767 adult students replied to the questionnaire.

### **The Results of the Evaluation**

Based on quantitative information, the study centres reach a little more than 300,000 citizens. The students begin their studies voluntarily, and those who have completed them are always satisfied with their studies. The fact that people studied and considered the activity positive proved that education is significant to the participants. Even though most study centres had an ideological background and values, these ideal and ideological expressions did not appear in the targets of an individual education event.

The evaluation showed clearly that the study centres carried out organisational education, based on organisation-based activity. This also develops a democratic society, where independent organisations of citizens complete their own tasks together with the study centres. It was also shown that study centres are experts of the activity of citizens' organisations, of civil society and of the third sector. The interviews revealed some difficulties of traditional organisation activity, but at the same time it was obvious that particularly the activity of senior citizens' organisations is very comprehensive and produces considerable results.

The Act on Study Centres restricted state subsidy to tightly defined output, missing the qualitative dimension. The amount of state subsidy has for long remained at approximately the same level, but activity has increased, so that study centres have hardly been able to support anyone other than their own member organisations. This in turn cannot guarantee the social pluralism in the best possible way, but state support for a certain kind of established and organised education provides those subsidised with a significant financial benefit compared to activity outside the study centre sector.

The results of the evaluation are partly contradictory. One problem noticed was, among others, that study centres were not visible in public, even though they combine their member organisations and promote networking on different levels. Still, it was justified to claim that study centres are not supposed to act in public. They act in networks with their member organisations and people. The activity of study centres reached people in the information of organisations and in local newspapers. There were numerous students at study centres who

didn't know that they were studying at a study centre, but they were satisfied with the education accomplished by the citizens' organisation.

The immediate effect of an individual study centre on concrete action remained unclear. The report says that member organisations made a significant part of the result of the study centres. Based on the evaluation material, the social significance of a study centre was suspected in the report. This suspicion particularly involved the 11 central offices, not individual people's studying and learning.

The most decisive weakness of the Finnish study centre activity was that the organisations had not been able to define their own duty in promoting pluralism and education. This was partly understandable based on the tradition of liberal adult education, not regulated by the state. However, less than 3% of the appropriation for adult education was guided to study centre activity. Apparently, the Finnish state should more clearly define its political aims concerning liberal adult education and especially with regard to study centre activity.

Pentti Yrjölä: *Opintokeskusten arviointi 1997* (The Evaluation of Study Centres in 1997). Evaluation 4/97.

#### **4. FOREIGN LANGUAGE SKILLS IN FINLAND**

The purpose of the evaluation was to produce a description of the foreign language skills of the Finnish adult population and of the need for foreign language training. Further targets of analysis included foreign language training provided in adult education, changes in the training supply and participation in language training.

The evaluation was based on the material of the National Adult Education Survey of 1995 by Statistics Finland. This questionnaire provided information on adults' foreign language skills, their need for training and on the participation in language training. A total of 4107 people at the age of 16-64 years were interviewed for this questionnaire. The results concerning adults' language skills are based on the adults' own self-evaluation. The reliability of the use of self-evaluation in the assessment of language skills was assessed separately in the report. Based on international studies, it was pointed out that on certain conditions the results provide a sufficiently accurate picture of the national language skill reserves.

The report introduced results of Finns' participation in international language tests and in the tests for the National Certificate of Language Proficiency.

The need for language training was also analysed in the Adult Education Survey of 1995, and several material packages of separate analyses were available.

The beginning of the report concentrated on defining adults' language skills and the starting points and targets of national language planning, above all, in general education. The target of the Finnish comprehensive school has been, for a little more than thirty years, that the whole age group studies at least two

languages that are foreign to them, and one of these languages is the second official language of Finland. The requirements set for foreign language skills by internationalisation and by the working life were also described.

### **The Results of the Evaluation**

The main findings of the evaluation can be summarised as follows:

- 72% of Finnish adults knew at least one language that was foreign to him/her. The percentage could be considered pretty high in an international comparison. 66% of adults knew English, 55% Swedish and 28% German. Only 8% knew French and 5% Russian. In addition, some adults knew other languages, but they were few. Though many adults know several foreign languages, the range of foreign language skills does not correspond to the general requirements set in different political decisions and outlines set for education.
- There were big differences in the level of foreign language skills. Adults clearly knew English better than other foreign languages – 32% of the adult population knew English well or very well. 17% of adults knew Swedish well or very well. Those who knew German, French or Russian well or very well formed a considerably smaller group than those with a good or very good knowledge of English or Swedish.
- Foreign language skills “accumulated” in those aged under 35 years, those with a lengthy education and those living in the metropolitan area. Language skills also “accumulated” so that those who generally knew languages probably knew at least two foreign languages rather than just one. 58% of adults knew at least two foreign languages. The corresponding percentage for those aged under 35 years was more than 80%. Thus, the EU recommendation of the knowledge of at least two foreign languages was achieved pretty well by the young generations.
- There were approximately 900,000 adults who knew no foreign languages at all. Most of these were more than 35 years old. A partial explanation for this is the decision made in connection with the comprehensive school changes of the 1970s that the entire age group should study two languages that are foreign to them. In the evaluation, attention was also paid to the fact that approximately 4% of the young people who have completed the comprehensive school system considered that they knew no foreign languages at all.
- Adults’ language skills were very clearly connected to the language training given and received in their general education.
- The language training supply for adults was very extensive both in institutions under the education administration and in the private sector. Annually about 1.6 million people participated in adult education, and

approximately 250,000 of them studied foreign languages. The language training provided by the market-based private sector corresponded rather directly to the education needs declared by adults.

- There were two conflicts in the participation in foreign language training for adults. First of all, even though 72% of adults stated that they needed language training and reasonably priced training was available, only 8% participated in the available training. Secondly, language training was most frequently participated in by those who already knew more foreign languages, and better, than the adult population on average.

Pirkko Sartoneva (ed.): *Vieraiden kielten osaaminen Suomessa – aikuisten kielitaidon arviointi* (Foreign language skills in Finland – an evaluation of adults' language skills). Evaluation 6/98

## 5. THE EVALUATION OF THE PEDAGOGY OF ADDITIONAL VOCATIONAL TRAINING

The evaluation project started in summer 1997, and the evaluation report was completed in January 1999. Vocational adult education was divided into three main groups: voluntary – vocational education, labour market training and personnel training. Voluntary vocational education may include initial or additional training. This evaluation concerned vocational additional training financed by provincial governments. In 1997, vocational additional training financed by provincial governments was attended by approximately 180,000–200,000 participants. The training periods lasted from a few days to even a year, and their purpose was to improve adults' vocational skills and to support lifelong learning.

It was difficult to accomplish the evaluation of the pedagogy of vocational additional training for four different reasons:

1. the spectrum of adults' vocational additional training is very extensive
2. it is not easy to define the concept of the pedagogy of vocational additional training
3. it was problematic to define the starting point, procedure, level and methods of the evaluation
4. no basic information was available on the students' education, age, vocational background and their current employment status.

In this evaluation, pedagogy was understood in a wide sense, as a combination of the targets, contents, procedures, materials, planning and practical implementation of teaching and learning. Thus, the pedagogy of vocational additional training was evaluated both with regard to the learning and teaching process and to the implementation of the targets set for the training.

The following questions were defined as the evaluation targets of the project:

1. Did the students feel that their vocational skills had increased?
2. What was the curriculum of each course like, and how well did it prepare them for the examinations and the practical realisation of the principle of life-long learning?
3. What was the personal study programme for each student like, and the process of drawing it up?
4. How did the curriculum, the teaching, the training arrangements and other arrangements supporting learning consider and utilise the students' adult age and their differences?
5. Were any teaching/studying procedures and methods, specifically developed and suitable for adults, used? How did the students experience the implementation of the training?

The material for the evaluation was mainly collected in three different ways. To increase validity, material on the same object was acquired in various ways.

1. Curricula received from the educational institutes (244 courses) and personal study programmes (from 52 courses). Independent education experts evaluated the curricula on an evaluation form which they had planned together.
2. Questionnaire forms for students who had completed their studies (1511 responses). Students of the above-mentioned 244 courses were asked for their background information and for their own evaluation of the course they had completed by post.
3. In February-March 1998, a theme interview was completed with the teachers and students of 17 courses. The intention was to acquire quantitative information that could not be gained by questionnaire forms or any other written material.

### **The Results of the Evaluation**

A curriculum had been drawn up for all training periods. The curricula for different courses were very different. Approximately one fourth of the curricula were such that they could not be utilised to implement training, according to the experts who evaluated them. The curricula were often simplified summaries of the subjects and numbers of lessons in the training. The curriculum had usually been made by the teacher. The students had not many opportunities to affect the curriculum. Alternative learning opportunities were very seldom available during the training periods.

In principle, a personal study programme could be made either orally or in writing. However, a personal study programme had only been made for approximately 30% of the students. Because even written curricula were mostly just brief initial descriptions, or only included the different parts of the training, oral curricula were likely to be even more general. The legislation required that a personal study programme was made for all students. The main outcome of this evaluation was that this obligation was generally neglected.

Courses were usually implemented in a different way compared to daily education. The students had experienced that their adult age was fully considered in the training. Their earlier knowledge and skills were also useful in the studies. However, the students could not choose new topics to replace topics that they already knew. The individualisation and self-guidance of studies were not implemented in practice.

The following was pointed out regarding the teaching methods:

1. Vocational additional training applied ordinary adult education methods, and the students were also satisfied with them.
2. The clearly most popular implementation method was interactive lecturing, where the teacher disseminated information, and the students always had the opportunity to interrupt the lecture and ask questions.
3. In these face-to-face teaching situations, the students also felt that they were usually treated as adults, and that their knowledge and skills were useful during the training.
4. Distance learning or self-studies were often used, but it was unclear how these study forms were related to the studies as a whole or to the achievement of the targets.

The student groups could be very heterogeneous, and the students' targets varied significantly. Some aimed to achieve certain skills required for their tasks at work, whereas some had started studying in order to receive further encouragement for their interests. The atmosphere in the student groups was positive, and it supported learning very well. The studies had promoted human and social growth and increased professional capabilities.

Studies were usually only guided in connection with face-to-face teaching. Other kinds of study guidance were very seldom available, though it seemed necessary based on the interviews. In the students' opinion, the teachers' professional expertise was better than their pedagogic skills.

The courses included very few periods of learning at work, and it was unclear how they were related to the targets of the training. However, more than half of the students had jobs.

In this evaluation, it was not possible to compare the level of the implementation of additional training to the level of the initial vocational education. The legislation required that only students with skills of an initial vocational education level should be accepted to additional training courses. This rule had not always been followed.

Approximately one fourth of intended training courses were cancelled, because there were too few students who were willing to complete the training. Furthermore, very many courses started with a smaller number of students than planned. In other words, the supply and demand of training did not meet.

It is still clear that those who attended vocational additional training had considered the training course to be useful. Many of those who had been unemployed before the course had become employed or started another training course. Though the training did not immediately promote the progress of one's

career, it could be pointed out based on the students' answers that training increased the knowledge and skills needed at work.

The results of the evaluation showed that the students had received both special vocational skills and self-confidence. They were generally satisfied with their training. Flexibility in the implementation of training courses and the individualisation of training was rare, and the students' own targets were not sufficiently considered.

Virve Remes and Pentti Yrjölä: *Ammatillisen lisäkoulutuksen pedagogiikan arviointi* (The evaluation of the pedagogy of vocational additional training). Evaluation 10/1998

## 6. LITERACY AT WORK AND IN THE DAILY LIFE

Finland participated in the second phase of The Second International Adult Literacy Survey (SIALS), implemented in the period between 1997 and 2000. The research material was collected in Finland in spring 1998. The international results were reported in the publication of the OECD, entitled *Literacy in the information age (2000)*.

The Finnish results were based on a representative sample (4250) of the Finnish adult population at the age of 16 to 65. The literacy evaluation results and background information were given by 2928 respondents, with Finnish as their native language.

In the comparison with the 20 countries that participated in the study, the Finnish literacy represented the good Nordic level. All Nordic countries were clearly above the international average level in all areas of language skills. Typical features for the Nordic countries also included the small number of people on the lowest level and the large number of those who reached the highest level.

The most part of the Finnish adult population, i.e. two thirds, read well, and thus met the literacy requirements of continuous learning in the information society, in different sectors. Approximately one fifth even reached the highest (4/5) skill level. Nevertheless, a third of the Finnish adults were such that though they could read in the traditional sense, their literacy remains on the two lowest performance levels (1 and 2), which does not meet the requirements of the information society. In different sub sectors, approximately one tenth of the adult population remained on the lowest performance level (1).

Linnakylä–Malin–Blomqvist–Sulkunen: *Lukutaito työssä ja arjessa* (Literacy at work and in the daily life). The Ministry of Education, the Institute for Educational Research, Statistics Finland and the National Board of Education. Jyväskylä 2000

## 7. OVERALL EVALUATION OF THE COMPETENCE-BASED QUALIFICATION SYSTEM

The competence-based qualification system is a national qualification system of vocational skills for adults. The legislation on it came into effect in 1994.

The evaluation involved the efficacy of the competence-based qualification system, the ways in which the central parts of the system accomplish their tasks and the results of the system. The evaluation described the development of the thinking of adults' competence-based qualification system, the actual implementation stage of the system and its development since 1994. A more detailed analysis was made of the activities in 1999 and 2000.

The starting point of the evaluation consisted of six main purposes of the competence-based qualification system, defined as evaluation questions. The evaluation questions were:

1. Are the examinations and the competence-based tests independent of the way in which the competence was achieved?
2. How does the competence-based qualification system correspond to the needs of the working life, and how do the labour market connections act in the competence-based qualification system?
3. How do the competence tests correspond to the needs of the adult population?
4. Are the competence test events compatible, as regards their implementation and requirement level?
5. How is the result management of vocational adult education realised through qualification tests?
6. How do the qualification committees accomplish their tasks?

The final evaluation setting was formed such that answers for each of the six evaluation questions were sought on three different levels of the system, including: national, qualification committee, and arrangements of the examinations level.

The evaluation material for each level is collected as follows:

National level:

- The statistics of Statistics Finland and of the National Board of Education
- Statutes and administrative decisions and other written material from authorities
- Research material
- Experts' interviews
- Interview material ordered from Taloustutkimus Oy
- Questionnaire to qualification committees

Qualification committees:

- The statistics of Statistics Finland and of the National Board of Education
- Statutes and administrative decisions and other written material from authorities

- Questionnaire to qualification committees
- Research material
- Experts' interviews
- Interviews of those arranging competence tests

#### Examination level

- The statistics of Statistics Finland and of the National Board of Education
- Statutes and administrative decisions and other written material from authorities
- Research material
- Questionnaire to qualification committees
- Postal questionnaire to those who had taken part in the competence test
- Competence test organisers' written material
- Interviews of those organising examinations and tests
- Interviews of those taking the test
- Interview of the representatives of working life
- Observations

### **The Results of the Evaluation**

The quantitative development of the competence-based qualification system has been significant, because in 1999, complete qualification was achieved by 12,815, and partial qualification by 9,221 adults, and a total of 23,395 people participated in the examinations. For example, in 1996 only 2,645 adults completed the whole qualification. In autumn 2000, the qualification structure had 388 titles, including 95 vocational (initial) qualifications, 174 further vocational qualifications, and 119 specialist vocational qualifications. Accordingly, there were 334 valid requirements for qualifications.

The Ministry of Education is responsible for the qualification structure, the National Board of Education decides on the requirements for the qualifications and appoints the qualification committees. The qualification committees oversee the arrangements of examinations, and educational establishments act as organisers of competence tests. The qualification committees act under the trustee principle, and their members include representatives of employers, employees and teachers. Some traditional administration and control power was transferred to the committees.

No information was available on the number of individual competence test events, but 170 qualification committees had concluded an agreement of arrangement with 422 educational establishments, and altogether there were 2,214 agreements on different examinations. Arrangement rights were distributed rather evenly throughout the whole country.

One of the basic ideas of the system was to offer adults the opportunity to demonstrate their vocational skills in tests that are independent of the way in which the skills have been acquired. Another central starting point was to increase co-operation among working life and vocational adult education.

The effects of the implementation of the qualification system on the field of vocational training have been generally positive. The needs of the labour

market have been increasingly considered, and the participation of working life in the assessment of performances and particularly in the qualification committees has brought the different parties closer to each other. On the national level, the labour market organisations have also affected the creation of the system and in the definition of the qualification requirements. The qualification requirements define the vocational skills required for the competence test, and this way of thinking differs from the traditional way of regulating education and training on the basis of the curriculum. For employers in the private sector, the competence-based qualification system was rather familiar as a concept, but only a few had concrete knowledge and experiences of the system.

In practice, nearly all those who took the competence test had acquired some preparatory training to succeed in the test. The idea of the system had not been totally accomplished. The position of preparatory training as a channel to the qualification was still surprisingly significant. A partial explanation for this was that the funding system of the educational establishments is based on their training volumes, not on the numbers of examinations completed.

In 1999, the number of participants in training courses preparing for examinations was approximately 72,000, and in the previous year about 67,000, but only a little more than 23,000 adults participated in the actual competence tests in 1999. It is difficult to understand why nearly 50,000 students did not show up at the competence test, since the training was specifically intended to prepare them for the examination.

An important target of the creation of the qualification system was to offer those employed without a vocational training a possibility to achieve a qualification. However, a surprisingly large number of those who qualified were rather young, or already had some kind of a vocational training. Only those who achieved a qualification in sectors dominated by women were more often aged more than 45 years and poorly educated.

The study indicates that there were some defects in the activity of the qualification committees. Unclear issues mainly included their tasks and authority.

The ways of accomplishing the actual examinations varied, though both the students and the representatives of working life considered the assessed vocational skills appropriate. Nevertheless, in many cases both the arrangement of the examination, the tasks in the competence test and the assessment of the performances only partly corresponded to the requirements for the qualification in question.

Though the results sometimes reveal some unexplained behaviour, it must not be forgotten that this system is only just reaching the comprehensive school age, and centralised control has been avoided. Diversity has often been tolerated, and it has been believed that all those acting on various levels do their best. Development and improvement has taken place all the time.

Pentti Yrjölä et al: *Näyttötutkintojärjestelmän kokonaisarviointi* (Overall evaluation of the competence-based qualification system) Evaluation 12/2000

# PART TWO

## **SOME METHODOLOGICAL ISSUES**



# THE PARADIGMS OF RESEARCH ON TEACHING AND THE ASSESSMENT OF EDUCATION

## 1. INTRODUCTION

The starting point for this article is the assumption that ultimately all the paradigms present in research on teaching (the models that direct studies made on teaching), are concerned with how teaching can support a student's learning process. In other words, all paradigms have the same aim, but the techniques and mechanisms that different study-directing models advocate are dissimilar. Because systematical studies on teaching have been carried out already for a few decades – using research designs based on various paradigms – we now have access to quite a large amount of empirical findings. So we are able to draw certain conclusions regarding the theoretical and practical significance of different paradigms. How have the studies carried out according to these paradigms helped researchers to understand the complex relationship between teaching and learning? What about those who will potentially be able to put the results of the research to good use? How have they benefited, or how could they benefit from studies carried out according to the various traditions present in this area of research? The purpose of this article is to consider the functioning principles of different paradigms, from the point of view of the assessment of education. The approach taken towards this theoretical task is such that each paradigm is described according to its essential theory and methodology-related assumptions. At the same time it is possible to examine some of the main findings of these studies. We will also present conclusions on each paradigm, with regard to its contributions and significance in the assessment of education. Towards the end we aim to examine in a comparative manner the merits, weaknesses and problems related to each paradigm.

For the purposes of this study, a paradigm can be understood as something that brings together a group of researchers who have a similar approach towards the study of teaching and learning. Both the substantive focus of the study and the method of enquiry are determining factors for the paradigm. The concept may be used also to analyse research literature, as we do in this article. The above definition can be found in the short account of the paradigms of research on teaching made by Burns in 1995. This view emphasises the content-centred nature of the paradigm concept, even though methods are also mentioned. The content and method-based aspects are apparent also in the definition embraced by Shulman (1986). He speaks of scientific societies whose members share interpretations of the 'correct' issues in research, of methods, techniques and modes of explanation. In addition to traditional and specific study models, there is currently a need also for more integrative paradigms (e.g. Good, 1996;

Shuell, 1996). This is because teaching and learning and especially the relationship between them make for a particularly problematic object of study, in which several variables, cognitions, actions and events affect the development of the teaching process and thus also the learning of individual students. In this account we will limit our examination to the three main paradigms (process-product, teacher cognition, student mediation), as currently a significant amount of experiences and empirical study data are available for use on these approaches.

Certain problem areas were found in each of the teaching research paradigms, and this was often done by comparing the paradigm to another model. On the other hand the process-product paradigm is criticised because of its emphasis on the teacher, but a similar criticism is not often made on the teacher cognition research (Good, 1996). Research on student mediation has criticised both of these traditions for forgetting the student, as it is important to note that from the point of view of the student the same teaching activities can be interpreted in separate ways. This individual student-based point of view comes to light only in studies made according to the student mediation paradigm, whereas process-product and teacher mediation-based research has generally progressed no further than the main effects of issues on the students.

One of the main objectives of educational assessments is the evaluation of students' learning-based results. Together with the paradigm used, this focus is another central factor that limits the extent of the content in this article. What is the relationship of the paradigm used with the study on teaching and the explanations made regarding students' learning levels? Does a paradigm-based empirical study reflect the fruitfulness of this way of explanation? These days we assume that the evaluation of a student's learning-based results requires a wide-ranging and deep understanding of the concept of learning; often we are not interested simply in narrow, factual data on school achievements, but also in information on the pupils' attitudes, moods, learning skills, etc. For instance contemporary research on school effectiveness (traditionally quite clearly interested solely in results) describes its aim as the diverse evaluation of the products of teaching (cf. Reynolds & Teddlie 2000). The assumption of this aim leads to a multi-dimensional examination and study of teaching.

The author of this article assumes that a **common dimension related to learning-based explanation mechanisms is that of how the main factors or variables within each paradigm become 'placed' in the teaching/learning phenomenon or within the structure as a whole, with regard to a student's learning processes.** Psychologically speaking, are they distant (so-called distal factors) or close (so-called proximal factors)? This question is also closely related to what directs the student. Is the student able to 'read' another person's (a student's or teacher's) cognitions? Or is it more important to describe the factors of the teaching environment? Even on the basis of research history it is likely that within research on teaching these are not mutually exclusive options. One solution would be that the research combine cognition and action into one all-encompassing and in general more wide-ranging object of study. Thus teaching would perhaps be understood better and could be developed on the basis of this (Schoenfeld, 1999).

Some paradigms are distal. In the sense implied above, this includes at least the teacher cognition and process-product paradigms. Even though in theory also these paradigms can show a student's position and the effect of this on the teacher's thought processes and actions, it is clear that in terms of measuring and of building a research design, the student's thought processes and actions are normally omitted in research based on these paradigms. On the other hand, the opposite extreme is no better: understanding and describing learning processes is in theory useful or even essential, but in itself does not form a genuine viewpoint for carrying out a teaching study.

In this article we intend to delve into research traditions that are the objects of internationally significant studies. All of these offer theoretically interesting mechanisms and attempts to understand the relationship between teaching and the student's learning levels. When it comes to the traditional models (process-product research, teacher's thought process research), we will also try to find out how the paradigms and the related research methods could be improved. All paradigms connote, at least implicitly, something regarding our understanding of teaching. Therefore when examining paradigms we should also think about what kind of explicit or implicit image of teaching they are creating for the researcher and for the reader. What kind of teaching ideal is being upheld here? And has it been possible to support that teaching ideal through the empirical research methods produced by the paradigm in question?

## **2. ASSUMPTIONS AND FINDINGS ON THE EFFECTIVENESS OF TEACHING THROUGH DIFFERENT RESEARCH PARADIGMS**

### **A) THE PROCESS-PRODUCT PARADIGM**

Even though the process-product paradigm no longer has a particularly significant status, the teaching research instigated by it continues to develop increasingly sophisticated forms in both studies on school effectiveness and in certain individual research projects (Needels, 1988; Shuell, 1996). For instance Shuell (1996) describes Nuthall's and Alton-Lee's work on classroom learning as 'new-generation process-product research.'<sup>\*</sup>

Research on the process-product model is interested in the 'image of good teaching.' Criteria for good teaching have generally been the students' cognition and attitude-related achievements, measured through so-called output

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<sup>\*</sup> = Some of the aims of the abovementioned researchers' studies may be equivalent, but in methodological terms Nuthall and Alton-Lee have very explicitly dissociated themselves from the process-product tradition (cf. e.g. Nuthall, 1999b). In this article we have placed those studies in the main student mediation group, because the emphasis in Nuthall's and Alton-Lee's most recent studies has been on understanding the student's learning process. It appears that their research is becoming increasingly directed towards the elements of teaching. The direction of their work has up to now been possible to define such that the description of the student's learning processes is a way of approaching generalisations regarding these processes and even speculations about what the teaching process implies. They have announced that their future work will be directed towards the testing of these implications (Nuthall, 1999b). This paradigmatic progress is related, in the opinion of the author of this article, more to the student mediation paradigm than to the traditional process-product model. Furthermore, Good (1996) places the work of Nuthall and Alton-Lee within the student mediation paradigm.

evaluations. In other words researchers have aimed to correlate the perceivable aspects of teaching and the average learning results produced by a class or classes. Some of the main problems in these older-style process-product studies were issues related to the evaluation of both the teaching event and the learning, and to the prevailing practices in methodology. The teaching event was described in terms of frequencies with regard to its different elements and characteristics. This led to the disappearance of the pedagogical idea of the teaching event: the whole event was easily fragmented into small, insignificant parts. The evaluation of students' learning levels was carried out like any other efficient productivity evaluation process, but it was not adapted in order truly to describe learning.

The true qualitatively significant elements of learning were not really discovered through this method; the elements found were quantitative ones (which kinds of timely opportunities the teaching offers to the student) and certain basic ones related to good teaching (such as directing and managing classroom activities fluently and without interruption, making teaching clear and logical, active teaching methods etc.). Because some correlative research results were received, however, which pointed in the right direction, it was possible to observe that teaching has both a quantitative and a qualitative significance within a student's learning opportunities. At one point, as even now, this was considered one of the cornerstones of optimism in research on teaching. After these principal observations were made it became in certain ways easier to continue carrying out the research, by including more intricate aspects and also braver and hypothetically more significant experiments. With these kinds of research settings it is easier to define how teaching can on the whole have an effect, and to what extent it can do this.

These days, process-product research is carried out less and less often in the traditional manner of the 1960s and 1970s. Research carried out according to this paradigm has developed into methodologically more advanced forms with studies on school effectiveness and certain individual research projects. Loosely speaking (or when paying attention only to the model's binary structure of teaching process v. students' learning process), this paradigm is still often used, for instance in the form of experimental research settings. The testing of teaching models typically involves the definition of an ideal situation, which is then compared to the ordinary situation. In this way experimental research methods may follow the paradigm's principal structure, even if the researchers using these methods had not consciously committed themselves to the process-product paradigm tradition.

One significant problem apparent in this model is that it gives no information from the point of view of the student. Attempts have been made to improve the paradigm in this aspect, and we can now talk about an 'extended process-product paradigm.' Needels (1988) has updated the research according to this model in his own studies by making the qualitative characteristics of the teaching event (the quality of classroom discourse) more tightly connected to the evaluation of the related learning-based classroom results. In traditional process-product studies, researchers were interested in the average results of the class, and the characteristics of the teaching event were then correlated to the average

test grade of the class. They aimed to make generalisations through averages of the data. The process-product relationships internal to the class were not examined in these types of traditional studies. Another drawback was that the same learning-based test was used across the data, in all the different classrooms, regardless of the fact that some aspects of the syllabi may have been missed out in certain classes. Needels (1988) remarks that those kinds of studies easily end up emphasising quantitative dimensions (time on task, classroom management), and that these dimensions can easily conceal the qualitative differences in the teaching event, even if these were present in the data.

Parallel to the process-product model is currently a significant set of studies that can collectively be defined as school effectiveness research (cf. Teddlie & Reynolds, 2000). These are studies that ultimately have the same objective as the process-product study, and which are structurally in line with this model. Naturally in school effectiveness research the selection of variables is broader than in the process-product studies that focus on classroom teaching. At the initial stages of the research the assumption prevailed that the school or the quality of its operations is not particularly significant to a student's development, which is determined by other factors (cf. Reynolds, Teddlie, Creemers, Scheerens & Townsend, 2000). This research did, however, contain certain methodological shortcomings, which minimised or prevented the effective manifestation of the school and its teaching in the study results. In general, the selections of variables in the American studies on school effectiveness of the early stages did not make evident the socio-psychological environment of the school, or to a large enough extent the processes present in the classroom and school. Thus the limitations in variables led to results on the basis of which the school did not really affect its students' development and learning levels. On the other hand contemporary international, methodologically effective, tradition-bound research has been able to show that the school does have an effect. This research was initiated in the United States and has since then spread and become rooted as a relevant area of study in the UK, the Netherlands and Australia. School effectiveness research (SER) can these days be subdivided into three parts: school effects research, effective schools research and school improvement research.

In the early stages the evaluation of achievements was based on so-called standardised achievement tests, in the same way as in studies on the process-product paradigm in teaching. Already during the 1970s, however, research in the US moved towards more sensitive result evaluation and more wide-ranging and realistic descriptions of the teaching process. The results of the research indicated that certain characteristics of the teacher were significantly related to the students' achievements. It was observed that human resources were important factors with regard to the development of the students' results. Other factors or variables also have an effect, but most notably through the attitudes and behaviour of the teacher and the students. So the main fault in early SER was in the fact that the school and classroom processes were not evaluated skilfully enough. Teddlie, Reynolds and Pol (2000: 47–48) write: 'By not focusing on instruction, school improvement runs the risk of manipulating variables only at the level of the school, which, in most research, explains much

less of the variation in student outcomes than do variables at the instructional or classroom level.’

More recent research on school effectiveness, on the other hand, clearly shows the significance of teaching. The importance of the set of variables becomes marked especially when it has been possible actively to control the different teaching implementation methods. For instance the research setting used by Brandsman, Edelenbos and Bosker (1995) contained four different sets of teaching. A central trend and general observation in school research is the fact that already during the 1970s there was a shift towards qualitative and detailed event research, which examined schools and classrooms. Generally speaking, the SER tradition appears to be going strong. This is demonstrated by the qualitative and quantitative development of the research, a journal dedicated to it and the clear and visible use made of the tradition in the evaluation and improvement of education (cf. Reynolds *et al.*, 2000).

What kinds of results has this tradition produced? Reynolds and Teddlie (2000) have produced an account of the processes that are related to the student’s learning success.

These include:

- 1) The effective management of schools.
- 2) A handful of proximal aspects of teaching, the time spent on reciprocal teaching, the efficient organisation of classroom teaching, the clear structuring of teaching material, action planning and certain variables of process-product research that have been found to be effective (e.g., task orientation, the routines and norms related to class activities and a warm, accepting and permissive environment that will allow the student when necessary to ask for assistance, the teacher’s work is directed also by the needs of the student).
- 3) This also entails a focus on learning, which becomes apparent for instance in teaching that is based on the curriculum and in the offering of opportunities for learning at school.
- 4) It is also important to create and maintain a positive school culture. All staff should support the same objectives. In practice this means cooperation between colleagues, good communication and a broad consensus on the aims of the school’s operations.
- 5) An effective school sets its aims high. These aims should also somehow be communicated to the students. In this sense high expectations are related to the teachers’ ways of thinking and also to what the students expect of themselves. How the significance of teaching is seen is essential: is it important, or is it believed that the level of results cannot be controlled or affected by working on them? When teaching is seen as important, it implies

a mood in the teacher and student which believes in internal control, in other words in that people have the opportunity of affecting their own learning levels and actions. This is naturally a positive way of thinking.

- 6) It should be possible to develop the student's sense of responsibility (duties and rights) also within the school and in the activities closely related to it. In this way it would be possible to promote the student's commitment to the school's aims. It is good if the school can increase the student's sense of duty for his or her own work through its actions. Students then also learn to control their own learning levels.
- 7) The student's progress is monitored, and an interest is shown in it.
- 8) Also the development of staff, and
- 9) the participation of parents to a certain degree is seen as useful on the basis of past research.

According to research done through this tradition, the teaching variables are very evenly significant across different cultures. The school appears to have an effect primarily in an indirect way through the classroom, although it does also have direct influences on the student's actions and learning. On the basis of current knowledge, also the psychological and socio-psychological dimensions related to the school are important (for instance what the relationships between individuals are like). The SER tradition suggests that the different levels of analysis (school, classroom, student) should in future if possible be combined. For that school of thought it is of central significance that the school affects the student's learning levels 'indirectly' through the classroom.

## **Conclusions**

In terms of the structure of the paradigm, process-product studies and SER studies can be said to be parallel. Both usually contain both a description of the teaching process and an evaluation of the student's learning results. But researchers no longer use solely quantitative research settings; these have become more wide-ranging and the methodologies used have on the whole progressed. In terms of the student's actions, cognition and learning, however, the paradigm is fairly distal: the point of view of the individual student has not really been taken into account. Traditionally interest has focused on the main effects. In many process-product studies the implicit definition of teaching emphasises the visible role of the teacher. The paradigm does perhaps not actively search for the best possible kind of teaching, but is satisfied with finding the best possible kind of traditional classroom teaching. On the other hand, through experiments it is possible to acquire completely new level of knowledge on the effectiveness of teaching strategies: conversely to what appears through correlative settings, it has been possible through these experiments to look for new teaching models in creative and daring ways.

## **B) RESEARCH ON THE TEACHER'S THOUGHT PROCESSES**

Teacher cognition research became one of the main trends in research on teaching after the process-product trend, in the 1980s and 1990s. Research carried out according to this model became very notable also in Finnish education studies (e.g. Aaltonen, 2000; Kosunen, 1994; Kansanen, Tirri, Meri, Krokfors, Husu & Jyrhämä, 2000; Patrikainen 1997). The model is still popular, even though problems and the need for development do of course exist. Certain studies have been criticised amongst other things for the fact that in them the teacher's cognition and his or her actions have become separate issues. Cognition is examined separately from the teacher's actions (Calderhead, 1996). In terms of education research as a whole, the model can be criticised also for forgetting in many cases to include descriptions of the student's actions and the learning process, at least at the level of research settings – even though at the level of principles, the speculative implications and the theory of the model include the student component (cf. Clark & Peterson, 1986). In his recently published PhD (2000), Tornberg examines the development of planning orientation, internal models, teaching event-related thought processes and reflection during the teacher training period. All these are concepts that describe the teacher's cognition.

When compared to process-product research, the object of study has changed from being the teacher's behaviour to being the teacher's cognition. We should ask whether this change solves the problem in teaching research. The teacher is naturally an essential individual factor, which for instance initiates the reciprocity between teacher and student. Several qualitative case studies have shed light in very deep and varied ways on the teacher's thought processes and their development during his or her career. Some studies have attempted to analyse how the teacher's subjective / personal theories are reflected in practice in the teaching. Therefore the criticism regarding the isolation of cognition is not applicable to all empirical research on teacher cognition; however, the reproach to do with the lack of regard for emotions is (cf. Calderhead, 1996). But we are still left with the main question: does the student 'read' the teacher's actions or the teacher's cognition? In terms of research these are not mutually exclusive options. The student makes use of the reflections of the teacher's cognitive and emotional dimensions apparent in the teacher's actions, but the teacher's cognition does not have a direct effect. Naturally the research should also take into account the principle of reciprocity: the student's actions and the reflections of his cognition affect the teacher's actions and reflections of cognition. How does the teacher cognition paradigm cope with all this? Perhaps it is not meant to give answers to all the questions that are relevant from the point of view of research on teaching.

Conceptual work is still necessary, and especially the internal relationships between the existing cognitive concepts should be questioned. Those who familiarise themselves with the subject will very often find themselves in a dense conceptual jungle, where many practically synonymous concepts make it difficult to follow the subject (cf. Aaltonen, 2000). This conceptual complexity also hinders the true development of the teacher cognition research. Of course it is natural that it is no longer acceptable to uphold just a general concept of

'the teacher's thought process.' After making a description and developing an understanding of this it is necessary to build up, based on the research, a vision of it as a whole, related to the effect of the concepts internal to teacher cognition on the teacher's actions, the reciprocity of teaching (Aaltonen & Pitkäniemi, 2001) and finally the factors that affect student cognition.

Furthermore, we may ask whether it is enough that the teacher's thought processes are 'high in quality.' It is certainly a starting point for good teaching, but it is not the only one – empirical studies indicate that a teacher's good knowledge about the subject does not guarantee a high-quality teaching process or the students' learning (Grossmann, 1995). Similarly an ideal (personal) teaching theory does not necessarily become real in teaching practice (Pitkäniemi, 1998; Wilson, Konopak & Readence, 1994). It is important to examine the teacher's more static cognitive structures (e.g. planning, implicit theories, practical theories) and their development and modification to become part of the teacher's interactive thinking. Related to this need is the article written by Aaltonen and the author of this account of the concepts of teacher cognition, and especially of the dynamic relationships between them (Aaltonen & Pitkäniemi, 2001). According to our understanding of the issue, the dynamics of teacher cognition in relation to the teaching process (which is reciprocal, changeable and partly unpredictable) can fairly easily be described with the use of four concepts of teacher cognition. These are: the teacher's practical theory, the lesson script, the agenda (an additional plan related to the lesson or modifications on the script) and the interactive, spontaneous thinking related to the teaching situation. One of the main empirical findings of our account was that none of the research settings for teacher cognition had a description of what would be the 'perfect' dynamics, encompassing everything from the teacher's theories to his or her teaching actions. Instead there are studies, which analyse for instance the relationship between interactive thinking and practical theories within the implementation of teaching. The teacher's thought processes may also be understood such that he or she has different ways of thinking depending on the time and the level of abstraction of the thought. Behind the teaching there may be underlying ideal, personal, partly implicit theories on what the teacher is aiming for in teaching. But the teacher is continuously also interpreting messages received during the teaching process, and aims to take these into account in his or her thinking and actions. In between these there are the plans (scripts, agendas), which also direct and affect the teacher's actions.

So how do the teacher's teaching theories, script, agenda and interactive thinking relate to the teaching process? As we remarked above, no really broad empirical studies have been carried out, which would simultaneously have examined the dynamic and complex relationship between all the cognitive dimensions and the teaching. In fact the suggestion that with the above-mentioned cognition concepts we may be able to describe the teacher's thinking in relation to the teacher's actions is preliminary and hypothetical. Only a test of the research setting, the collection of data and the thorough examination of empirical results would give us enough information on the whole and real functioning of the suggestion.

In traditional research on the teacher's thought processes a lot of work has been done comparing experienced teachers and novices at the beginning of their career. In this way researchers have found the mechanisms that cause differences to appear between teachers, which consist of the experience and findings received from teaching and the consideration of these. A reasonably normal result is the fact that in the expert and experienced teacher some kind of congruence exists between the practical theory and the actual teaching. This kind of teacher has a notable amount of pedagogical content-based knowledge and scripts, which make it possible to create flexible actions, parallel to the ideals, in the teaching process. According to empirical studies, experienced teachers have often collected a large amount of curriculum scripts. Planning has also been found to give the teacher's cognitive resources freedom to think clearly during teaching, and thus the complexity of the teaching process is clarified and controlled. On the other hand in teachers who are still at the stage of teacher training, conflicts arise between the teacher's individual ideal theories and the perceived teaching practices (Pitkaniemi, 1998). Experienced teachers are able to predict how the lesson is going to go, and for this they can use mental images and visions. This does not, however, imply the slavish following of a previously made plan. They select suitable scripts on which to base their teaching. Thus the teacher who is experienced in real interactive situations is able to implement his or her plan in a flexible manner. This is connected essentially to interpreting the situation from the point of view of the teacher; in other words updating the script to an extent. The dynamic plans or agendas related to this can change and become redefined when necessary. The plan does therefore not remain static, but is modified according to the situation. These changes are not normally particularly radical, though. Teaching is not directly based on a diagnostic attitude, but aims more toward small changes being made to the plans (cf. Aaltonen & Pitkaniemi, 2001).

Research on the teacher's self-efficacy (e.g. Ross, 1995 and 1998) is not considered to be part of teacher cognition research, even though it examines the point of view of the teacher's thinking or rather of his or her beliefs. Research carried out according to this tradition differs in many aspects from actual studies on the teacher's thought processes:

- 1) Theoretically it is in general based on Bandura's theory of a person's social and cognitive learning. Bandura's thoughts have been adapted to the teacher's working context, his or her teaching-related thinking and ways of showing these thoughts through the teaching process. On the other hand the teaching process and the findings and conclusions related to it on their part modify the teacher's beliefs and thinking. It is therefore a continuous cycle.
- 2) This research tradition can to a large extent be considered quantitative. The first significant research methods were developed in the 1980s, and since then self-efficacy evaluation has been used in several empirical studies.

- 3) Traditionally the research carried out has been very explicitly interested in the relationship between the teacher's self-efficacy, the implementation of the teaching and the students' learning. But on the basis of the prediction of the student's learning levels it differs both from process-product research and from teacher cognition research. Studies have been able to prove the positive effect of a teacher's high levels of self-efficacy on students' learning achievements, on the level of innovation of the teaching, on how challenging and active the teaching is, etc.
- 4) From the basis of research results it has also been possible to build wide-ranging knowledge on the relationships between teacher cognitions, the teaching event and the student's actions, cognitions and learning levels. The research has been related to several of the background and context factors affecting a teacher's self-efficacy. Even current empirical findings enable us to build fairly broad structural models. Research on the subject has, however, used less tight experimental and qualitative research designs (e.g. in order to trace the ideal and less ideal situation). The correlative relationships, which research on self-efficacy largely describe, are loose and suggestive rather than exact or powerful.

The research tradition has aimed also to prove empirically the significance of the teacher's self-efficacy for the student's work and learning levels. There is no exact information on the mechanism by which the effects become apparent, but most likely they are based amongst other things on the teacher's target-setting and attributional processes (e.g. the teacher's idea of how much teaching can affect a student's actions and learning). From these attributes the teacher can draw conclusions on the basis of observation: the teacher can monitor for instance the extent to which his or her actions affect a student's actions. Empirical studies have found that teachers with high levels of self-efficacy set themselves and their students challenging targets, feel responsible for the results of the teaching and have the strength to make an effort regardless of setbacks. The beliefs related to these attributes are a central source of energy in the building of self-efficacy, as the teacher's estimate of his or her own efficacy is based more on the personal consideration of past actions than on external criteria. With time these interpretations and beliefs become stabilised and fairly permanent, but still not entirely inflexible as expectations. Thus expectations can change to account for new information received.

So why is research on teachers' self-efficacy currently strong and still developing? One of the principal reasons is probably the fact that since the mid-1980s the tradition has been able to produce fairly constant and significant results. The teacher's levels of self-efficacy are in correlation to the student's cognitive and emotional achievements. Ross (1995) remarks that this happens even if the abilities of the students in the sample group are controlled. The teacher's personal self-efficacy is related especially to the students' achievements in language and society-based subjects, whereas the teacher's beliefs about the general effect of teaching appears to be in correlation especially with students'

skills in mathematical subjects. In terms of interpretation and explanation, however, at least one methodological limitation is apparent: we cannot with certainty speak of a direct causal link, as the main factor may also be an unknown third variable which has not been taken into account in the research. The most significant and positive issue to arise from these results is that the teacher's self-efficacy is logically in correlation with the student's school-related values and attitudes. A high level of self-efficacy in the teacher has a positive relationship also with the student's strong motivation, self-esteem and self-direction. Some researchers have argued that the relationship between the students' results and the teacher's self-efficacy is partly, if not wholly reciprocal. In some ways they do clearly fuel each others' development (cf. Ross, 1995).

## Conclusions

Within the evaluation of education, the teacher cognition research is both theoretically and in terms of past empirical studies very distal. This research gives fairly few answers to the question of how students experience and receive teaching, and especially to that of what students' reciprocal role is in the teaching process. It may be that teacher cognition research was received as a kind of sure and safe solution as a consequence of the experiences and fears related to process-product research. It is positive that teacher cognition research has a stronger basis than earlier process-product studies in theoretical thinking and the basic knowledge that the teacher's thoughts and beliefs are crucial in terms of the formation of the teaching process. From that basic knowledge the researchers have been able to identify teacher-specific differences within cognitions and actions, but this has happened in environments 'safe' from the point of view of teaching dynamics: the risk factor is not as high as in process-product research, in which the predictions of students' results both succeeded and failed.

What about the understanding of teaching implicit in studies on the teacher's thought processes? Early teacher cognition research (from the late 1970s and the 1980s) did not actively try to change the understanding of teaching that the traditional process-product method had supported during its period of popularity in the 1960s and 1970s. According to that interpretation, 'the teacher teaches as a consequence of which the student learns.' This stylised but implicit view can be found in most individual empirical studies on the teacher's thought processes. Teacher cognition research has very often taken as its starting point the prevalent (traditional) ideas on teaching. It may be that researchers have not been able to relate this critical aspect to teacher thinking studies as strongly as to process-product research.

Teacher cognition has clear connections with the implementation of teaching and the quality of the student's performance, but the effect and interaction chains remain fairly distant from the student. Therefore it is necessary, at least at regular intervals, to carry out a broad analysis of the network of variables used in the research. Has this been done? Not for many years, at least not in a thorough way. Of course the variety of subjects within the concepts and research settings is very large. A positive exception in this aspect is formed by the aforementioned self-efficacy studies (cf. e.g. Ross, 1998), even though these

mainly only give correlative indications of the significance of teacher beliefs within the levels of teaching and learning. One fruitful research objective for the future would therefore be the clarification of the relationships between self-efficacy and other teacher cognition concepts, and their connections with the implementation of teaching.

### **C) STUDENT MEDIATION RESEARCH**

This paradigm can be seen as a very broad area of study. It is a model that is interested in the relationship between student cognition, teaching and learning. This title includes a whole lot of research that does not, however, include all of these factors in the same research setting. A typical characteristic of studies carried out according to this paradigm is the fact that the student's actions and cognitions within the learning environment are seen as the central object of interest for the research. A reason behind the 'invisibility problem' of the paradigm is perhaps the fact that researchers are not very clearly conscious of the existence of this 'umbrella paradigm' of student mediation and concentrate mainly on its subtypes. This gives an indication also of the thematic and methodological changeability of the paradigm. Research carried out according to this paradigm can therefore be classified in many different ways. For instance Good (1996) structures the research in a thematically detailed manner, extracting the following subparts: student social cognition, student learning in small groups, student task literature, student passivity, students' self-regulated learning, teaching for understanding, student volition and goal co-regulation. By examining these areas researchers attempt to build an understanding of the student's thought processes and of the mediation of classroom events through student processes.

The student mediation paradigm can be seen as a study of the mediating factors. Of course these mediators – e.g. the student's motivation – are already considered to be essential indicators of teaching and learning. In the mediation paradigm interest focuses, however, on how students as a group or as individuals handle learning experiences and create interpretations of the teaching environment. The question is, what is filtered through that environment and absorbed into the student's cognition and actions? But the paradigm can also be seen narrowly and tightly as something through which we study the effects of teaching on the student's cognitive processes, and the relation of these to the student's results (Winne, 1987). Thus we can achieve a better understanding of why the effects of teaching are such as they are.

Questions that prevail in research done according to this paradigm are often similar to the following: How does the student make observations of his environment within the socio-cognitive teaching process? Is he able to relate the material offered by the teaching to an existing cognition? What about motivation and enjoyment? Does the student want to study? Does he feel he is in control of his own study and cognition? Does the student see himself as a learner? Does he have an idea of what is necessary in order to reach his targets? The process of learning to learn can be seen for instance as the learning of successful work/achievement links. Does the teaching process support the

creation of these links? Studies on the student's levels of self-efficiency have shown that the student who is able to see his own perseverance and challenging work, sometimes even work that has encountered difficulties, producing results, is a student who succeeds and is motivated. In other words the student learns to see and realise that success in learning is not coincidental but crucially related to the learner's own actions. The question is, what kinds of learning experiences are the teaching or learning materials (reciprocal or narrative, traditional or modern) able to offer? So can the student build these cognitive links? Recent studies carried out by Nuthall (1999a, 1999b) indicate that the student needs to receive a reasonable amount of learning experiences. Budding ideas on links have to become stronger for continuous learning to take place. Good learning is exactly this kind of creation of connections or links between experiences. If learning is seen as the development of these kinds of connections we will understand that the cognitive and motivational characteristics of the different learning environments are what is crucial, as opposed to what kind of formal or categorical teaching method is used.

Research on teaching, which emphasises the role of the student's cognitions and/or actions can be subdivided into at least three groups. The subdivision used here is more methodological than a similar one made by Good (1996).

- 1) One part of the studies contains teaching-related variables (e.g. the cognitive mediational paradigm in its 'Winnean' sense – cf. Winne, 1987).
- 2) Other studies retroactively examine the speculative relationship between the learning process variables and the teaching variables, or for instance the issue of how a teacher should make use of the research carried out on the learning process.
- 3) Another set of student mediation studies describes only the relationship between the student's actions, his learning processes and actual learning levels. For instance in studies on the student's self-efficacy the connections between motivation, learning and other cognitive concepts are seen as crucial.

Since the 1980s, Nuthall and Alton-Lee have carried out research on the student's learning experiences within the classroom. The students in the sample groups have been relatively young (of upper elementary or middle school ages). The initial methodological solutions make these studies differ from both traditional teaching research and pure learning-centred studies. Up to now at least, the results have served the understanding of the student's learning, but in future studies the researchers will focus more on the teaching viewpoint and on applying experimental settings (Nuthall 1999a, 1999b). The results show very clearly that different students learn different things, even when they study in the same classroom. Therefore even the same classroom actions lead students to distinct learning processes. In the light of these studies it appears that students in the same classroom share the same activities only ostensibly.

Nuthall and Alton-Lee are interested in the factors that determine students' learning in the classroom. They argue that classroom learning can be understood only as a dynamic process of change. A concept encountered and received for the first time is processed in a different way the next time. Therefore the researchers have, on the basis of their methodology, attempted to trace the concept or idea of 'life history' internalised by the student. Learning appears to be to a large extent an individual process, even when students participate in the same teaching actions. This leads to a study of the learning individual, who with the help of his working memory aims to create connections between new experiences and existing knowledge. The assimilation of a construct, an intellectual structure, takes place when new experiences become connected to other consecutive experiences that contain related data. The representations of these experiences become linked to each other and with the relevant background knowledge and finally the structure as a whole is transferred into the long-term memory as a new intellectual construct. According to the findings of Nuthall's and Alton-Lee's research we need at least three or four experiences related to the same data. The length of time between these experiences should not exceed two days, in order for the experiences to form an integrated and new intellectual construct. The researchers have aimed to predict whether a certain construct (of concepts and thoughts) can become part of a student's knowledge. According to the results of their research (which only ever include a handful of students, and individual concepts and thoughts as objects of learning) around 80-85% of a student's learning is possible to predict on the basis of his classroom experiences. The studies prove that a student really does need a few consecutive encounters with the information.

According to an argument presented by Nuthall (1999a), learning processes are not necessarily different depending on the students' abilities. So why do different students learn and assimilate knowledge in different ways, even though in principle they receive the same classroom activities? In their studies, Nuthall and Alton-Lee have sought the variables that might cause the differences in learning experiences. They classify the main variables into four groups: (1) the understanding of the aims the tasks involve, (2) participation in small groups, (3) background knowledge and beliefs, and (4) interest and motivation. According to Nuthall, 'abilities' are in fact consequential to these differences in students' classroom learning levels, not causal to them. Students take part in classroom activities in different ways and to different extents. The quality and quantity of the participation show in the quality of the learning experiences. How far the student is able to internalise the activities offered by the teaching – in other words, what the student aims for in his endeavours – is crucial. The relationship between experiences received in the classroom environment and the abilities related to school learning can be seen as a reciprocally developing one. It is an interaction which includes the student's earlier knowledge, the learning process and socio-cultural and motivational processes.

According to conclusions drawn by Nuthall (1999a), classroom teaching should be seen more as a community of learners, whose members are able to make full use of the opportunities it offers. This community should interpret

knowledge as something 'you give and you receive,' as something shared between its members. Nuthall's research also shows that the mind of the student is a complex system, in which several processes take place at the same time. This view is opposite to that according to which the assimilation of information is fairly simple and a learning process of a less advanced type. Nuthall's conclusions also criticise the school of thought by which the use of single and separate problem-solving techniques would develop students' thinking skills.

In addition to studies on the learning experiences received by students in classrooms, research on students' self-efficacy (Zimmerman, 2000) can currently be considered a significant specific area of study within the student mediation group. Self-efficacy beliefs have been found to affect students' choices of actions, their levels of effort and perseverance, and their emotional reactions. Students with high levels of self-efficacy have greater motivation to participate in things, to work intensively and to make long-term endeavours. These students also lack the study-hampering emotional reactions that make work too oppressive. Self-efficacious students are able to cope with difficult situations. Students with really high levels of self-efficacy search for tasks considered difficult or challenging, and are willing to complete them. It appears that through a student's level of self-efficacy we should be able to predict the student's level of effort, motivation and therefore also learning results (cf. Multon, Brown & Lent, 1991). Self-efficacy is related to the extent to which the student's studies are self-directed. A self-efficacious student makes use of the main processes within self-directedness, such as target-setting, self-monitoring, self-evaluation and the choice of a suitable learning strategy. Empirical studies on the subject do indeed show that a student's self-efficacy has an effect, through his motivation and self-directedness, also on the development on his school results.

Research has also been carried out on the effect of teaching and other more general social factors on a student's self-efficacy beliefs (Zimmerman, 2000). One significant way of improving a student's levels of self-efficacy appears to be to model self-direction techniques, describe them to the student and offer the student so-called enactive feedback. Furthermore it would be good to get the students to use short-term targets in their own study. If a student fulfils short-term targets he will most probably see 'with his own eyes' concrete enough proof of the improvement achieved in his learning. This will mean evidence for the student of an increase in his capabilities; i.e. of higher levels of self-efficacy. It would be important for the students to set their own personal learning targets. This would have a positive effect for instance on how they become attached to work that serves learning. Enactive feedback (how much it is used and how immediate it is with regard to the student's achievements) is significant for the student's study-related thinking. It is essential to make the students see that the feedback is attributionally related to their efforts: they would realise that effort leads to progress. This would increase students' levels of motivation and feelings of capability.

## Conclusions

The psychological closeness of student mediation and school results makes it possible to produce very tight and tenable scientific studies. Research has been carried out on many of the concepts of educational psychology, and its results show the very close relationships between these concepts and the students' learning levels. As examples of this type of research we mentioned above Nuthall's and Alton-Lee's work and studies on self-efficacy. These studies include research which examines the variables that affect learning results also from the point of view of the learner's cognition and the variables related to teaching. This indicates that the studies that truly follow the mediation paradigm would be possible to carry out even in a strict Winnean sense (teaching - student mediation - student's learning - analysis of relationships). In general we may conclude that from these types of studies we can progress also to implications regarding teaching, expansions of the research designs and experimental studies.

### 3. SYNOPSIS FOR THE COMPARISON OF DIFFERENT RESEARCH TRADITIONS

Research methods have developed over the last few decades, and new research paradigms have appeared. None of the early paradigms has completely been rejected, however; progress has largely been made within the paradigms. We could say that the main paradigms have become separated and sharpened with the use of focused research and methodical practices. The paradigms have therefore become differentiated. On the other hand almost all the methodological lectures and research accounts given of the research paradigms point to a need for expansion and at least implicitly to factors of the teaching phenomenon that are displayed (even prominently) in one of the other paradigms. What is the long-term significance of this? That teaching research will not continue to develop qualitatively only within the paradigms. We aim for integrative paradigms and through them to increasingly all-encompassing research settings. In this sense the current teaching research paradigms are not opposite and in competition with each other, but in fact complementary. But here too the whole is worth more than the sum of its parts: many interesting theories and hypotheses need to be tested in multidimensional research settings.

The focus of research is weighted differently in different paradigms (Table 1). For their use in educational evaluation the teaching research paradigms should include factors that describe the student's cognitions and learning, as well as the teaching process, in as varied a way as possible. From this point of view, very few indeed of the current studies are relevant. Only the student mediation paradigm can be considered a research model that describes the relationship between the student's thought processes, actions and learning in a varied enough way. On the other hand researchers have not dared to include in that paradigm factors that would tell us something about the teacher's point of view and thought processes. From the point of view of the student's learning process the student mediation model can be seen as theoretically and

Table 1. Comparative examination of the paradigms of research on teaching

Paradigm	Object of comparison		
	Distality/Proximality	Research on the student's learning	Teacher's action
Process-product	distal	always	always
Teacher cognition	distal	seldom	occasionally
Teacher's self-efficacy	distal	occasionally	occasionally
Student mediation	proximal	occasionally	occasionally
Paradigm	Teacher cognition	Student cognition	Understanding of teaching
Process-product	no	incompletely	often prevalent
Teacher cognition	yes	seldom	often prevalent
Teacher's self-efficacy	yes	occasionally	prevalent or searching for new
Student mediation	no	yes	prevalent or searching for new
Paradigm	Practical implications	Wide-rangingness of research design	Mechanism of effects of teaching
Process-product	limited	often narrow	teacher's actions
Teacher cognition	limited or unclear	often narrow	teacher's theories, knowledge, decision-making, planning and/or interactive thinking
Teacher's self-efficacy	fairly significant	various research designs	the teacher's concepts and beliefs are reflected in his or her actions and the work of the class
Student mediation	some	various research designs	the teaching environment in relation to the student's learning experiences, previous knowledge, participation and motivation

methodically successful; the factors it includes have a highly proximal relationship with the aim of the student's actions, i.e. learning. All the other paradigms used in this comparison are more distal, and therefore let more factors external to the research design affect the learning results. The researcher is not always aware of these effects.

In terms of our understanding of teaching, both the process-product research and the teacher thinking research can be considered to uphold the traditional image and role of the teacher. Those paradigms have therefore not been used to seek particularly radical changes to the prevalent teaching practices – indeed we can describe it as a relatively small-scale development of the traditional understanding of teaching and a description of qualitative variations in teaching. In this sense research focusing on the teacher's self-efficacy and student mediation is somewhat more open. For instance studies on self-efficacy have analysed the kind of connection that exists between the teacher's beliefs and the characteristics in teaching that activate students, as well as the cooperation between teachers. These characteristics are related to a fairly modern idea of teaching.

The practical implications of using research paradigms is difficult to estimate. In the case of the traditional process-product paradigm expectations were high, but in practice the outcomes of the studies remained comparatively small. The general significance of studies on teacher cognition has been larger in that teachers have begun to think about their own work. On the other hand this paradigm is quite distal with relation to the student's actions and cognitions, and because of this the practical value of this paradigm is not very high, either. The advantage in research focusing on the teacher's self-efficacy and on student mediation lies in that they offer both the researcher and the recipient of the study (e.g. the teacher) information on and at least a chance of understanding how a student learns and what factors in the student's environment and work affect this. Then we can aim to support students' learning with a basis in this kind of developed thinking. None of the paradigms, however, have instigated particularly wide-ranging studies. This criticism can be applied to almost all the traditions of research on teaching. It would probably be easiest to draw up a full picture from the basis of the teacher self-efficacy tradition, regardless of the small number of studies that exist in this tradition currently.

The process-product paradigm relies on visible manifestations of behaviour – on spoken language, actions and especially the teacher's behaviour. The teacher cognition paradigm on the other hand pays attention to the teacher's thought structures and processes: in a way cognition is in the background of all action, but its nature is still complex and it has been described with many overlapping concepts. Research on the more extensive connections between the teacher's thoughts and actions is still ongoing. The teacher's self-efficacy research relies on the teacher's beliefs: high beliefs are transmitted in practice into similarly high-quality actions, and onward into the student's learning. What these beliefs are and how they become realised in practice is still unclear. Assessment of the student mediation paradigm is more difficult, because it encompasses very varied individual studies. Generally in these studies the central thesis is that

the student 'does his own learning,' though success is also dependent on the kind of level of interaction the student achieves socially and cognitively within his environment.

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## **ASSESSMENT AS SUPPORT FOR THE LEARNING PROCESS**

### **1. THE TASK OF ASSESSING A STUDENT IS BECOMING MORE VARIED**

The catchphrases within the process of updating the educational system in the last two decades have been a constructive idea of learning, individual freedom of choice, self-directed learning and the development of good self-awareness and a positive self-image. These key ideas bring about a desire for changes in schools' operational principles, in the content of the teaching, in teaching methods, the educational environment, the roles of teachers and students and in the assessment of students.

This article will centre on the assessment of a student, which is expected, based on the thought of a constructive idea of learning, to centre not only on direct educational results but also increasingly on the learning process, in order to direct and support the student's learning and to promote the development of a positive self-image. In addition, the assessment process is expected to be continuous and varied, and to take place so teachers are in liaison with the students and their parents (Finnish National Board of Education, 1999). Thus assessment will no longer be carried out as an event separate from the rest of the education process but will start to become one of the most important and central tools a school makes use of.

In addition to being personalised, varied and supportive, the assessment system must also be objective and improve the comparability of school results. In Finland a sign of progress in this direction is offered by the national criteria given for the final assessment of basic teaching, the stricter bases given for teaching syllabi and the good learning criteria included in these (National Board of Education, 2001), national examination centres and the assessment of school results by theme. A trend like this indicates that in spite of highlighting the supportiveness of assessment, to some extent the process of assessing a student always implies control. In addition to supporting individual growth and development, a school must also classify students by comparing their results to other students' results and to the set targets.

'When assessing students' characteristics, capabilities and skills, a school will at the same time set the line that differentiates a 'normal' identity from an 'anomalous' identity. ... It is normal for a student to be 'academic,' 'practical,' 'good' or 'bad,' but if you are incapable of fulfilling the expectations set for these normal identities, you diverge from the norm and are therefore anomalous. ... When assessing the qualities of each

student the school begins simultaneously to cause students to have identities based on the school's symbolic organisation.' (Antikainen, Rinne and Koski, 2000: 277–278).

The conflicting pressures involved in the assessment process come into view when we compare the viability of using different assessment methods, such as verbal (= written) assessment versus numerical assessment, in schools. Verbal assessment methods are considered to stand for a modern kind of assessment, whereas numerical methods are deemed to be symbolic of the traditional ways of classifying and comparing students. Users of numerical methods backed up their system by referring to the long tradition, ease of use and practicality of numerical assessment. The advantage of verbal methods is that they are believed to support the student's self-image in a more positive way than numerical methods. Verbal methods are, however, criticised for being time-consuming and difficult to interpret.

In practice, the conflicts present within the assessment process become evident in the divergence between spoken and written aims and actual actions. It seems that on the levels of speech and written teaching plans teachers have adopted the new advances in assessment theory, but that in practice the assessment of students is mostly carried out according to the traditional comparison-based assessment ideology, even when new methods are used (Mäensivu, 1999). The belief that simply changing an assessment method will solve the problems involved in assessment has been proved incorrect. According to studies, changing from numerical assessment to verbal assessment does not greatly change the content of the assessment. As in numerical methods, in verbal assessment methods assessors concentrate on the results of learning, on diligence and on behaviour, paying little attention to the learning process. In practice the difference between verbal and numerical assessment methods could even be summarised by concluding that in verbal assessment numerical grades are just replaced by words such as 'excellent,' 'good' and 'needs practice.' (Mäensivu, 1999).

By this I do not wish to negate the importance of developing assessment methods. Positive proof has also been received on the usefulness of verbal assessment as a tool for directing learning and building a student's self-awareness (Korpinen, 1982; Mäensivu, 1999). My aim however is to demonstrate that the assessment process cannot be updated simply by changing assessment methods. Essential to the issue is how the assessment process is linked to the teaching and learning processes, what assessment focuses on, how it is carried out and what kinds of results we expect and hope to receive from it.

In this article I will examine ways of developing the assessment of students in order to make it meet, to the highest possible degree, the targets that have been set for it as a tool for directing learning and building students' self-image and identity as learners.

## 2. ASSESSMENT AS A BUILDING BLOCK IN THE STUDENT'S SELF-IMAGE AND SELF-RELATED BELIEFS

According to guidelines given out by the National Board of Education in 1995 and 1999, our aims in assessing students are to support, direct and encourage the students in their studies. Further detail on the aims of assessment was given in 1995:

Assessment should promote the students' growth according to targets set in teaching plans, strengthen the students' *self-awareness*, support the development of the learning process, support the students' *recognition of their own capabilities and skills*, provide students with tools with which to *build their self-image*, and clarify the students' vision of their *own targets and opportunities*. [Italics by KM]

In 1999 these aims were extended by adding the need to develop students' principles of self-evaluation, to give them control over their lives by creating a target-based, self-directed learning process, and continuously to study and test what the students' own principles are. According to the guidelines, assessment must support the students' development into self-aware and self-accepting people, and help students to build realistic self-images. The bases for the guidelines were described thus:

'By being aware of their own situations and by wanting to develop themselves, students can affect their own learning and thus improve the control they have over their own lives. In addition, if a student can participate in setting the targets for his or her own work and activities, and in the assessment of his or her development in these, the student has better chances of becoming a life-long learner. Then the student can set him- or herself challenging targets related to acquiring knowledge, skills and capabilities, and continuously test and expand the limitations of his or her own principles (National Board of Education, 1999).

Generally speaking there are no great differences between the 1995 and 1999 guidelines, but one small distinction can be found. In 1995 the guidelines mentioned self-awareness and students' *recognition* of their own skills and opportunities, whereas in 1999 they spoke of the *testing* of their own limitations and opportunities. The word choices (recognition vs. continuous testing) give us cause to stop and examine the difference between expecting students to learn to recognise their own capabilities and expecting them continuously to test their own limitations and opportunities.

Could we interpret the choices of words so that when we are speaking of the *recognition of skills and opportunities*, skills and capabilities are seen as permanent, internal qualities (the entity theory; Dweck, 1999), which as such are also recognisable and definable? If on the other hand we are speaking not of recognition but of the *continuous testing of one's own opportunities*, do we consider

capabilities to be possible to develop, and as such possible to affect with external factors (the incremental theory; Dweck, 1999)? According to the former theory, capabilities would be internal and permanent, whereas according to the latter theory, the student's own efforts and endeavours and the support and guidance given to the student by others would have a crucial significance in the development of capabilities.

This shows that our understanding of the nature and development of a student's intelligence is the central issue also when attempting to assess students in a supportive way. The assessment process will take different forms and directions depending on how capabilities and intelligence are seen, how we believe the understanding is formed that a student adopts regarding his or her own capabilities, and how we believe and know this issue to be related to learning and its results.

Popular wisdom sees a direct connection between the ideas of capabilities and learning. Students who consider themselves to be capable are believed to take on new tasks with energy and also to cope well with their studies. The matter is, however, not so simple.

According to Dweck (1999), students who consider themselves generally capable and who have a high level of self-confidence will set themselves challenging targets and produce good results, but only when learning situations and tasks are kept similar. If the situation or task changes, or if the student unexpectedly fails, the high levels of self-confidence and an image of the self as continuously capable will cause performance levels to fall. According to research it is the students who have high levels of confidence and in addition believe their capabilities to be malleable, who will most eagerly take on new challenges. These students will not become paralysed in the face of unexpected things. On the contrary, they will be able to cope with difficulties and even improve their levels of performance in challenging situations.

Thus we can see that the learning process is affected by how well a student is able to cope with failure, and how important it is for him or her to be able to keep intact a belief in his or her intelligence as a fixed trait. Students who consider themselves constantly capable will endeavour to preserve their sense of security by keeping up an image of themselves as capable, and by continuously trying to conceal occasions on which they do not meet those standards. Failure is a threat that weakens their sense of certainty and acts negatively upon their self-image. Because of this they will take on new tasks and challenges with less confidence than students who see their own capabilities as something that can develop.

Students who see their capabilities as malleable are open to new experiences, take risks and constantly expand their understanding of themselves and their own opportunities. They are able to preserve their sense of certainty and their self-confidence even in situations of uncertainty (Dweck, 1999: 51; Niemivirta, 2000). According to Lepola and Poskiparta (2001) even the process of achieving literacy is linked to a student's learning experiences in the past, and to whether the student is responding in a task-oriented, self-oriented or dependence-oriented way.

In other words, the issues of recognising one's own skills and opportunities, testing one's limits and taking on new tasks are related to whether a student is able to maintain his or her self-confidence even in difficult and strange situations, and whether the student is able, whenever he or she fails, to act without adopting a defensive mode of behaviour (Dweck, 1999: 54). According to Bandura (1997) what is essential is not how capable a person sees herself as being, but which kinds of tasks and situations she considers herself capable of handling.

Based on the abovementioned conclusions we can specify the aims of a new way of assessing a student: assessment must promote an understanding of capabilities which will help students to believe that their own capabilities are possible to develop and that they themselves can affect this development. In essence this means that assessment must first and foremost increase the students' sense of certainty and improve their abilities to handle uncertainty. Having achieved this we can use assessment as a tool to encourage students to tackle different kinds of tasks and to take risks. Thus the students will also be able better to make use of the opportunities offered by their schools (Thrupp, 1999: 40).

Below I will examine what this kind of assessment is like that increases the student's sense of security and builds a sense of capabilities as possible to develop, and what this kind of assessment focuses on.

### 3. SUPPORTIVE ASSESSMENT FOCUSES ON THE FACTORS THAT AFFECT LEARNING

According to Article 22 of the Finnish Basic Education Act (1998), the assessment of a student should focus on learning, work and behaviour. In the principles of assessment, assessment is defined as the evaluation of school results or the evaluation of progress made in a student's studies (National Board of Education, 1999: 8–10). The evaluation of a student's work is described so that it also includes the learning process, which will become a central point of focus of for the assessment process.

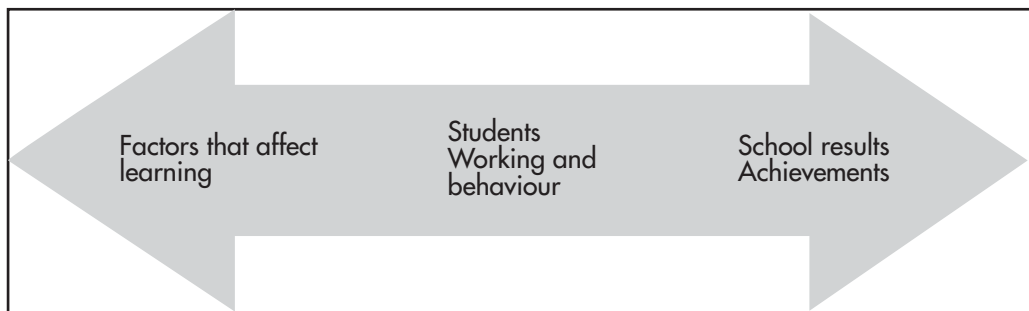


Figure 1. The learning process

Below I will describe the learning process as a whole that includes a) factors that affect the student's learning, b) the student's working and behaviour and c) the student's school results (Figure 1).

By behaviour I mean here the student's way of acting in certain school groups and certain learning situations. By working I signify the student's way of taking on tasks and complete school work assigned to him or her, either alone or together with the teacher or other students. Factors that affect learning are the mental processes related to learning and studying. School results are all the products, achievements and progresses of a student, which are evaluated in relation to targets set out in individual learning plans or in the school curriculum.

Achievements, behaviour and working have been assessed at school for generations. Assessment methods have included the teacher's observations, various tests and numerical assessments. Factors that affect learning have not traditionally been directly assessed. However, as we begin to expect the assessment to support the student's studies and to develop the student's self-image to a greater level than before, it is no longer enough simply to evaluate results, working and behaviour. Therefore the factors that affect learning will increasingly become focal points of the assessment process.

Factors that affect learning can be subdivided differently according different frames of reference. I refer here only to researchers, whose ideas have been of useful to me in practice inwhen developing assessment methods.

According to Hautamäki *et al.* (2000: 16) the parts that make up the process of learning to learn are acceptance of the task received, the mental processes activated by the task and finally the person's entire personality.

In the structural model of learning as something to develop given by Hautamäki *et al.* (1999: 31), the factors that affect learning are related to the student's development task (I am what I learn), and the student's opportunities for action (offered by and before the school), cultural standards, future prospects, adoption of the role of school pupil, setting targets for learning, self-assessment and valuation of own learning levels, attributes and long-term motivation, as well as his or her self-image as a learner.

According to Koro (1993) the factors that affect self-directed learning are responsibility, self-acceptance as a student, planning skills, internal motivation, internal assessment, openness to new experiences, flexibility, independence, and cooperation and/or teamworking skills.

Flaherty (1999) examines the factors that affect learning from the point of view of coaching, and suggests that when we assess learning we should find out about the following factors: 1) immediate concerns (what the student has on his mind at the moment), 2) commitments (whom and what the student is committed to, 3) future possibilities, 4) personal and cultural history and 5) mood (a mood that communicates superiority or inferiority).

Zimmerman (2000) subdivides the factors that affect learning according to the stages of completion of a task: preconceptions, performance and control of one's own will, and self-reflection. Zimmerman's description progresses from the point of undertaking the learning process to the time when results are assessed.

By combining different factors considered to affect learning, I have been able to specify the description of the learning process (figure 2). Thus, the factors that affect learning are:

- 1) cognitive processes related to the learning task (memory, deduction, learning plans and control, learning-related beliefs),
- 2) state of will related to the learning task (target-based endeavours, desires and efforts),
- 3) emotions related to the learning task (feelings, satisfaction, dissatisfaction),
- 4) self-image as a learner (learning background, contextual self-image),
- 5) ontological self-image (idea of self as an integrated person).

When the assessment of students is based on this kind of description of the learning process (Figure 2), the task of assessing expands from the evaluation of educational results and behaviour to the evaluation of internal processes. The teacher is expected to look in depth at how the student feels about learning, what feelings the learning situation arouses in the student, what the student's aspirations are and what kind of self-image the student has as a student and learner. These things can be assessed only by interpreting the student's behaviour and results, and asking and communicating with the student about his or her plans, targets, explanations and experiences.

When looking in depth at the student's aspirations, moods, targets, feelings, self-image and earlier learning experiences, the teacher is faced with the issues that Arnkil *et al.* call 'half-truths', (2000). By half-truths I mean here the teacher's own interpretations, predictions and guesses, made with a basis in the student's behaviour, work and results.

Initially the equation of assessment of a student with talking about half-truths may seem vague, even dubious from the point of view of the student and in some people's eyes even degrading of the teacher's authority. But by referring to Arnkil *et al.* (2000), the issue can be seen also in a very different way. From the point of view of the recipient of the assessment process – the student – it may be safer if the teacher presents his or her interpretations, for

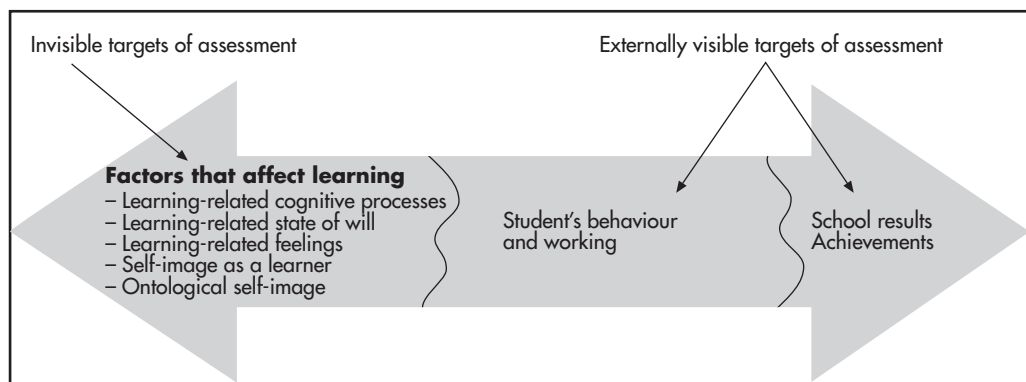


Figure 2. The factors that affect learning as part of the learning process

instance of the student's motivations and aspirations, as truly his or her own subjective observations and not as supposedly objective truths. According to Arnkil *et al.* (2000) it is easier for receiving parties to receive subjective assessments on themselves than so-called objective ones. In subjective assessments the teacher does not in actual fact assess the student but tells us of his or her own observations.

When referring to Arnkil *et al.* we have to be careful and note that their research focuses on social work. On the basis of this research, however, we can question whether it is also easier for students and their parents to accept assessments that are presented openly by the teachers as their own opinions, instead of as 'final truths.' Can students learn to accept the teacher's assessment simply as one way of talking about themselves, and not as a final judgment on them as wholes (Flaherty, 1999: 70)? Is it possible that by accepting subjectivity in assessment we can improve the supportiveness of the assessment process, strengthen the teacher's and student's independence, give value to the experiences and feelings of both and to release the teacher from the position of judge and the student from the position of the judged?. If this were to happen, Snellman and Rätty's (1998: 85) vision of assessment as something the teacher offers the student would be fulfilled. Would this be possible, however, without also changing the teaching?

#### **4. ASSESSMENT IS PART OF THE TEACHING – LEARNING PROCESS**

School assessment is linked to the content of teaching, the quality of educational tasks given, teaching methods and generally to everything that takes place in a school. Therefore it also has to be examined as a part of a specific kind of teaching – learning process and school culture. This is why to the description of a student's learning process in figure 2, we must add the operating procedures of the school, the school curriculum, the teacher's behaviour and work methods, and the factors that affect the teacher's teaching work.

Figure 3 combines the student's learning process and the teacher's teaching process into one teaching – learning process. Here the teacher's beliefs, aims, feelings and self-image determine which types of targets the teacher is going to set him- or herself and through that to the students, how the teacher classifies students, how the teacher encourages and gives support to students and how strongly he or she demonstrates to the students that by trying and making an effort they can find new possibilities within themselves and are able to respond to challenges set to them (cf. Hautamäki *et al.*, 2000). Thus the factors that affect the teacher's own work also become part of the students' learning process and of the kinds of ideas they form of their own capabilities.

By expanding the learning process into a teaching – learning process we are also linking the assessment of a student's achievement – to the assessment of the teacher's work.

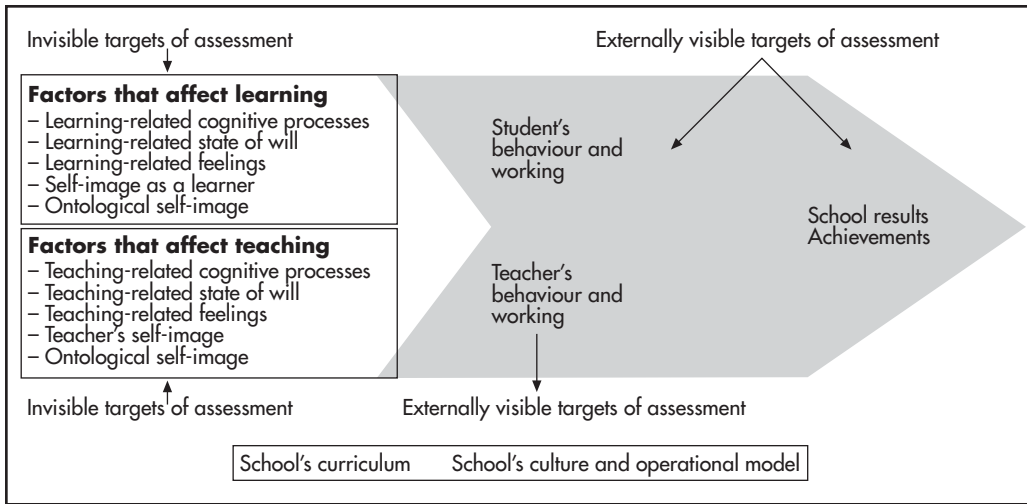


Figure 3. The teaching – learning process

Seen in this way, a renewable concept of assessment requires the teacher to be prepared to evaluate also his or her own roles in the student's learning process. Only then will assessment lead the student also to examine learning as a whole, not only in relation to him- or herself but also in relation to a specific environment, as well as to the support and opportunities this environment offers (Zimmerman, 2000: 15). Assessment becomes a combination of various many-sided reciprocal relationships.

## 5. FROM REPORT TO DIALOGUE

Flaherty (1997) describes the changes in assessment processes as a move from traditional assessment to developing assessment. The new kind of developing assessment takes place in a dialogue, is based on the subjective opinions of the assessor and the assessed, predicts the future, leads to testing individual limitations and is based on the autonomy of the teacher and the student. Assessment as something to develop is not satisfied with simply observing results; it endeavours to affect the student's studying and the student's self-image as a learner.

The difference between the traditional and developing assessment methods lies in that in traditional assessments the responsibility for learning is entirely the student's, whereas in the new developing assessment the responsibility for learning is shared also by the teachers and the parents that support the student. A situation of shared responsibility can be reached by taking a deep interest in the students and by making the students' progress a joint learning task between the teacher, the students and the parents (Flaherty, 1999: 105).

For this to happen the teacher has to be aware of how the student sets him- or herself targets, how the student reacts to issues and how the student gives explanations on his or her performance. Thus assessment becomes a combination of querying, suggesting, guessing and listening tasks.

By becoming interested in the student's aspirations, the teacher is helping the student to see things in a new way and encouraging the student to behave in different ways (Bandura, 1997; Flaherty, 1997: 34). At the same time the teacher will add his or her own methods of supporting the student. Assessment thus becomes close to coaching and to the so-called developmental model of teaching, in which teaching and assessment processes continuously monitor the child's development, promote it and correct any defects (Hautamäki, Kärkkäinen, Rätty-Sarho, 1995, quoting Hautamäki *et al.*, 1999).

Comparing assessment to coaching gives cause to examining assessment also from the point of view of therapy treatment methods (Kuusinen, 2000), as therapy also involves changes and learning. Cognitive therapy methods can be adapted in order to describe assessment as a cycle of reciprocity between assessment and action, in which each learning aim is carefully defined, concrete learning targets are set, study and practice methods are determined and results are assessed. The essential issue is that assessment leads the student in a concrete way to testing different possibilities, helps the student in individual issues to examine his or her self-image as a learner, teaches the student to explain and reassess earlier learning experiences and failures, and finally encourages the student to examine his or her perceptions about his or her own future. Thus testing and action are also part of assessment. For all this we need new reciprocal assessment methods.

## **6. THE PATH FROM TRADITIONAL ASSESSMENT TO DEVELOPING ASSESSMENT**

The path that leads from the traditional assessment of results to this new kind of reciprocal and supportive assessment can not be traversed quickly. Its direction is, however, clear; this can be seen in Finland for instance in the guidelines for the new school curriculum, in which assessment methods are approaching the assessment model described in this article:

‘Assessment is individual, truthful and varied.’

‘Assessment gives support and encouragement.’

‘The teacher is in dialogue with the student regarding progress.’

‘The teacher leads the student towards recognising what and how he or she has been thinking.’

(National Board of Education, 2001)

So the problem when changing to a new assessment method is no longer the direction we should take, but the way in which the changes should be carried out. The most essential question is how teachers and schools move from the

traditional kind to the new supportive kind of assessment. This movement can be described through stages, in which teachers: a) reflect on their own and the school's assessment methods, b) evaluate how fair and open those methods are, and c) add a reciprocal element to the assessment methods. Below I will describe these stages.

### **a) Recognising the factors that direct and affect one's own assessment work**

Changes in assessment methods will stem from the teacher's self-reflection. Before any changes actually take place in assessment practices, the teacher must be prepared to examine his or her own understanding of learning, teaching and assessment procedures. A teacher can do this by stopping to examine his or her own assessment methods. One way of doing this is by using visualisation (Williams, 2000), a method I have used myself as a tool at various training events. I have asked teachers to draw a picture of their own assessment methods and to write a short description of themselves as assessors.

Visualisation brings a sense of distance into the examination of one's own assessment methods and lessens the feelings of inadequacy and helplessness often related to assessment. The pictures help teachers to examine their own work and encourage them to become acquainted with colleagues' assessment methods and thoughts. The descriptions are also useful in that they give form to the assessment task, which is often otherwise seen as quite chaotic. On the basis of the picture they have created, the teachers can examine in a concrete way what their assessment methods consist of, what issues they think are central to the assessment of students and what kinds of roles they, the students and the parents take on in the assessment process. Becoming acquainted with their own assessment methods increases the teachers' self-awareness, and encourages them openly to discuss their assessment methods also with the students and their parents.

In a study that I am currently carrying out, I have evaluated 20 teachers' assessment methods in the abovementioned way. In the study I classify the teachers' assessment descriptions into seven groups:

Description type 1.

- Assessment is reciprocal. The content of assessment is of secondary importance.

Description type 2.

- The basic measure of assessment is a course. Assessment is the description of the process from the point of the task being given to the point at which the next task is planned.

Description type 3.

- Assessment is the examination of the content of learning. The content of assessment is compared to requirements set in the school curriculum.

Description type 4.

- Assessment is the movement of teacher's thoughts. Assessment is formed depending on how issues are weighted in the teacher's mind.

Description type 5.

- Assessment is support of the student's ontological self. The student as the target of assessment is like a planet that is looked at from different directions. Assessment is related to the student's background factors. Assessment is a tool for knowing the student's being. Assessment is part of emphasising the student's opportunities.

Description type 6.

- Assessment is scheduling assessment methods. The annual cycle of assessment tasks is important. Assessment is the use of different tools.

Description type 7.

- Assessment is part of examining a teacher's work. Assessment is the comparison of results to the student's knowledge, skills and actions as well as the teacher's knowledge, experience, teaching style and feelings. Assessment is a two-way procedure, in which also the teacher undergoes a learning process.

Of course the above description types do not give a fully rounded picture of any one teacher's assessment methods. In practice the way teachers see assessment is not fixed it may change with the class or the situation. The descriptions are, however, useful in that they show how different the viewpoints are from which teachers look at assessment, and how different the issues are that arise from each viewpoint. The teachers will relate to assessment in different ways depending on the viewpoint they have chosen, and they will each find their own difficulties in assessment, set different targets for it and imagine their own role as assessors in different ways.

The descriptions as above indicates, however, that in developing assessment methods, we must part from the premise that the teachers' own experiences regarding the development of assessment methods have brought them satisfaction (Cooper *et al.*, 2000). The teachers must feel that they are valued and listened to as professionals, that their experiences are learned from and that developing their assessment methods will link in a positive way to their aspirations of a job well done.

From the student's point of view, however, assessment is not limited to one teacher's way of assessing students. For the student, assessment is a continuous process in which different assessments made at various times are joined together. If this kind of continuous process is to become a way to support the student's learning in the long run, the assessment methods that are used in succession should complement each other. In order to make the assessment a continuous process, teachers must be aware not only of their own assessment methods but also of the other teachers' methods and the assessment ideology adopted in by their schools. The question in developing assessment is not simply of the individual motivations of teachers. Supportive assessment involves the whole school's ideology; in other words, how students are encouraged not only to assess their own learning but also to discuss their learning with different people in different situations. It is essential that students have the opportunity to speak about their learning experiences in an open, safe and inviting environment,

which will also allow for the handling of any feelings related to learning, such as happiness, pride, disappointment and shame. For this they need different platforms, where attention is turned away from stereotyping and classification towards learning, studying and working. In the variety of this approach, there will also be use for the teachers' different views on assessment methods. Not all teachers have to be interested in the same issues and methods; each teacher can grow professionally by using the assessment method that is most suitable for him or her. In addition we have to ensure the reliability of assessment methods.

### **b) Evaluating the fairness and reliability of assessment**

In traditional assessment methods, evaluation would be focused on educational results. In Finland assessment was traditionally carried out numerically and the teacher was the self-appointed authority. Students were not always informed of how the final grades were arrived at. It was always normal for students to be compared with each others and for an assessment scale to be created according to a normal curve.

With the arrival of new ideas on education and new guidelines for assessment, however, the comparison of students with each others is no longer allowed. This has made teachers shy away from comparing students' performances and from saying honestly what progress each student has made. When at the same time assessment methods have changed and the new school reports includes more often written text instead of numbers, the result, according to many parents and teachers, is that assessment has sometimes been reduced to a meaningless way of concealing the truth. This is demonstrated by the demand for 'correct assessment' both parents and teachers express when they want to know at what point the student is going to receive 'completely honest' feedback. What is the significance of this demand from the perspective of developing more supportive assessment methods?

At this point one of the most important things is, that when extending the assessment process to relate to the whole learning process, we must describe the learning process in ways so determined that students, parents and teachers can know what issue is being assessed at each point. Increasing the reliability of assessment means that learning targets have to be operationalised and that assessment methods have to be made more transparent (Mäensivu, 1999). The student must receive feedback which openly compares his or her behaviour, work and results to the set targets and criteria. The comparisons have to be transparent enough for the student to understand what principles have been used and in relation to what his or her learning levels and results have been assessed. The comparisons must be made in relation either to the student's individual targets, to the performance criteria given to the class, to the targets set in the teaching plan, or to the criteria used in the final assessment. Only then can assessment help the student to be aware of his or her own learning as a whole, and direct the student to set him- or herself new learning targets.

If students do not know what the criteria of assessment are, they will reach a dead end in which they can be the recipients of structurally more varied

assessment methods, but still depend on increasingly defective feedback in terms of content.

In other words, supportive assessment must transparently focus on the entire learning process. When compared to traditional assessment methods, supportive assessment combines the assessment of results, behaviour and working with the assessment of the factors that affect learning, in order to stage a discussion on the student's motivations, aspirations, mood, learning experiences and self-image as a learner and person. The inclusion of the factors that affect learning in the assessment process makes it possible to relate results to the student's efforts and targets, the support the student has received and the quality of learning tasks and methods. This kind of coaching-based assessment requires effort from the student, but at the same time demonstrates that the student will receive the support he or she needs. The student will not be left to cope alone.

### **c) Adding reciprocity to assessment methods**

When extending the assessment process to include the whole learning process, the position of the teacher as assessor is no longer self-evident. It is not clear that the students and their families will accept an assessment that can sometimes focus on very sensitive learning-related factors such as internal motivations, earlier learning experiences, support received by the student or excuses related to failure.

If the student is to accept being coached, he or she must trust the teacher and want to put his or her learning – not only his or her school results – in the hands of the teacher to assess and direct. Without mutual trust between the teacher and the student, the assessment process cannot become supportive. If there is no trust, the new developing assessment method can at worst become simply a game, in which each party is playing the part that suits them best at each time.

An open, trusting reciprocity is the starting point for a supportive assessment method. Assessment will become a joint effort between the teacher and student only when the students and – especially in the case of younger students – their parents become committed to assessment, understand the purposes of assessment, know the assessment method and trust the teacher as assessor.

## **8. SUPPORTIVE ASSESSMENT IS A CHALLENGE FOR THE TEACHERS**

Developing the assessment system is one of the most important tasks in a school, and up to now it has been left for the teachers to carry out by themselves. Because of this, the teachers as systematic creators of assessment methods need and deserve all possible support and the opportunity to improve their didactic learning, their knowledge of pedagogical psychology and their skills in creating reciprocity. If these are missing there is the danger that the development of the assessment system will be left incomplete. Assessment can become a superficial

evaluation of the old factors of behaviour, work and attitude, simply using new methods.

In developing assessment methods we need patience to examine what is possible within the job of the teacher and how far the teacher's resources will reach. We must remember that assessment is carried out as a part of day-to-day activities in the classroom, where a lot of other things also go on (Torrance & Pryor, 1998). We must not promise more things in the name of assessment than what is possible to do well.

Patient thought is needed also regarding how and where the new methods are expected to have an effect. Sometimes it seems that we trust in the common good when developing assessment methods. We think that self-evaluation by students, supportive verbal assessments and inviting discussions on assessments will already by themselves support the student's learning and self-image. This may be true, but is it enough?

The aims of assessment are more far-reaching than that. It is not enough that the student receive generally positive feedback. The feedback must focus on issues that are relevant in terms of the student's learning and growth. A student's view of his or her own capabilities is related to what the student can actually achieve. Because of this, supportive assessment cannot become simply a way of giving positive feedback, separate from concrete learning and work. Assessment must be anchored in the main tasks present in a school: strengthening learning processes and improving results and life skills.

This is important for all students but especially important for those ones whose past development, family backgrounds, language and/or culture-based differences or lack of skills received at home have caused them to be unable to work in the social environment offered by the school and not to be given enough support to test their own limitations. Especially for these students, supportive assessment is a tool for supporting individual learning.

In developing new assessment methods we must be simultaneously idealists and realists. As educators we must do our utmost to maintain and develop students' beliefs and hopes in their own opportunities, and to make them tenacious in striving to reach their targets. At the same time we must realistically question and examine how much we can affect the students' results and self-images by using assessment methods (Hautamäki *et al.*, 2000: 24). We must not exaggerate, but neither must we underestimate teachers' capacities to have an effect on students' success (Thrupp, 1999). In developing new assessment methods it is good to remember that a school is only a school and 'just a school' (Gale & Densmore, 2000).

New methods of assessing students are not created in speeches or instructions that are given out. Assessment can change only when a joint effort is made by teachers, students and parents, and hopefully increasingly often in cooperation also with teacher trainers and researchers. There is great potential for development within the area of assessment; but let's be realistic!

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## **MATERIAL ON SELF EVALUATION ON THE WEB**

The National Board of Education reserved a website in spring 2000 to support schools in evaluating their activity. The website has been developed in order to form an archive, a service and a source of support for schools. The materials have been formulated so as to serve schools, which means that they are used by the operators and by those who are responsible for the active choices. The material does not require that one should follow a certain order created in advance. The website is open for everyone, its use has not been restricted, and no fees are required.

When the new legislation on education came into force at the beginning of the year 1999, it meant a clear emphasis was placed on the significance of evaluation in education. This is shown, among other things, by the demand that the organisers of education should evaluate the education that they are responsible for. Thus, the organisers of education decide what kind of evaluation is carried out, how and when. At the same time, the implementation of the legislation requires that schools themselves should also evaluate their activity. We have decided to call these evaluations, which the schools themselves are responsible for, the self-evaluation of schools.

Self-evaluation was introduced to schools as early as 1994 with regard to the framework of comprehensive school curricula. Self-evaluation on other school levels was introduced at the same time or soon after that. It has not always been easy developing self-evaluation in schools. The difficulties include partly the new way of thinking, according to which information should be collected systematically and reflected on, and the activity at school should be evaluated. Another problem is to acquire sufficient skills and prepare oneself to be able to carry out this process. The website, created by the National Board of Education, aims above all to fill the need for skills and to facilitate the implementation by providing models and tools. The material is primarily aimed at basic education, the education meant for pupils at compulsory education age, i.e. 7–16 years. However, many parts of the material can also be applied and utilised at other education levels.

### **Objectives during the planning phase**

Before the website was opened, there was a planning phase that lasted about one year. The working team decided from the very beginning that they would make material that is easy to adopt from the user's point of view. In addition to the above-mentioned reasons, another reason for this was that the routine of using computers is not yet a reality in all classrooms, even though a majority of pupils are already considerably computer literate, and that the technical capacity

of the computers and web connections can also be restricting factors. On a practical level, this means that there are two or three things that should be continuously kept in mind. We should not set high requirements for the user's previous knowledge, for example with regard to the choice of terms and concepts, but this also has consequences that concern, among other things, the abstract level of the text and references to other material. The web environment itself also sets some requirements. For example, it is important that one can relatively quickly access the actual subject and the real contents of the material. In this sense, web material can be compared to an afternoon paper. The user should have the opportunity to familiarise himself quickly with the main issues, and those who wish should have the opportunity for further orientation, for example, with background, definition of concepts, further applications, experiences, results etc.

User-friendliness also means that we hope to provide a material structure that is comprehensive and well-structured. Also, it means that the structure according to which the material has been organised should be easy to understand, and it should form a logical and natural part that is related to the reality that the schools are responsible for. Therefore we have also adapted our material so that it is clearly based on the school or the pedagogic activity as an operational environment. The user is free to choose between the various elements or parts. At the same time, this flexibility of material can mean that it is required that the user has sufficient skills and motivation to create him/herself an idea of how the material can be used. It is possible that the material should be completed with instructions, for those users who expect something like that. When the material volume grows further, it is therefore topical to create different types of models of how the material can be utilised.

### **The user group**

For the sake of simplicity we have, up to now, called the eventual users schools. In practice, the self-evaluation material gives us the opportunity to engage a long list of different groups. Primarily, the material is intended for principals and teachers at schools, but there is also material that is intended for pupils, for parents and for decision-makers in municipal school administration, such as members of the school management, board members, elected representatives and so on. The material is also useful for officials in municipal administration, provincial governments, etc.

We have also discussed the question of utilising the possibilities of the media in order to establish communication with the user. Discussion sites and forums have been opened on the web in different connections, but the experiences have been varying. The material on self-evaluation provides an opportunity for feedback, questions and comments from the side of the schools, to those establishing the appropriate side, but appropriate discussion forums have had to wait so far, until a clear need and a functioning form for them are crystallised. E-mail is apparently a more handy and discrete discussion channel than the official discussion forums where one statement can exist for long periods, though the topic may already be out-of-date.

## **Flexible application opportunities**

From the schools' point of view it may happen that in addition to suffering from the lack of information one also faces the opposite, a flood of information and advertisements from different institutes and businesses that are prepared to learn everything about evaluation. From the national level, it has not been required that the evaluation, carried out by the organiser of the education or by the school, should take place according to a specific model. Therefore, flexible opportunities are provided on the local level to create one's own models or to choose according to one's own decision. In order to support orientation between the different models, the material on self-evaluation aims to provide suggestive basic information on well-known models and ways of thinking, together with references to literature and web addresses.

When introducing new tasks and methods, there is often the risk that the measures are presented in a somewhat simplified form, and that the difficulties that may appear during the implementation are neglected. There is an urgent need for material, describing experiences of carrying out evaluation, everything from how the initiative is taken to, focusing, the implementation methods, tools, the necessary working time and resources, to what kinds of results were received and how they were assessed, processed and connected to the continuous development of the activity. These experiences and descriptions are mostly strongly context-bound, but still descriptive and giving other schools a lot they can familiarise themselves with. Few schools have currently time to document all these phases during the evaluation. Perhaps people also don't want to emphasise the difficulties they ran into, but rather describe a successful and accomplished project. Therefore, it is difficult to include this dimension in the material on the web, even though one knows that nearly all schools also experience difficult and conflict-filled phases during the implementation. So far, this has been solved by creating discussion texts, describing the different work phases of self-evaluation more generally. The material also includes links to some schools that have presentation material of the school on the web and also with information on the self-evaluation project carried out.

## **The current status of the material**

The current material is still stored in a written form in one standard archive folder, per each language version. The contents can actually be divided into four different text types. The introductory texts give an introduction to a method or a subject within evaluation. They are often connected to descriptions of the method itself, aiming to complete a self-evaluation. For some areas, there are ready-made and tested tools forming instruments for data collection, for example, polls, forms, matrices or similar. The fourth type of material consists of factual texts, meant to form a type of comparison material for the interpretation of the school's results by the school itself, for example, the pupil-teacher relationship and the atmosphere at school. There is also information on current evaluations on a national level, and published evaluation reports have not been forgotten.

## **Supporting the work at school and in the municipality**

Thus, the purpose of the material on self-evaluation is to support schools in their work. That is why the material is available for all users, can be used without costs, and is published in two languages; in the majority language Finnish (95% of the population) and in Swedish (5% of the population, 8% of the schools).

The demand that the organisers of education and schools should evaluate their work was something new when it was introduced, and it was not very well known in some quarters. The requirement for evaluation has sometimes been connected to performance-based financing, to the requirement for control, to the increased consumer rights, to the right to choose etc. For many of those working at schools, this has appeared to conflict with, for example, the value basis of basic education, with general education and respect for equality as points of emphasis. All this has caused it to be a demanding and comprehensive process for schools and municipalities to create a well-based and functioning evaluation which can be understood by the majority of people. In many cases, restricted resources also mean that all wishes cannot be realised and that one therefore has to face various compromises. To a certain extent, one can thus say that during the two years that have passed after the legislation came into force, schools and municipalities have been feeling their way, so as to learn to know the methods and processes. With time, precision will probably increase, with regard to the handling of both resources, implementation forms and choices of what one wants to evaluate.

## **Methods should be chosen with consideration**

The general impression is that so far the great majority of schools carry out self-evaluation by using either questionnaires, which are distributed to the pupils, their parents or those who work at the school, or alternatively evaluation based on evaluation discussions among the teachers. The questionnaire usually covers teacher and pupils' comfort at school. Therefore, the evaluation material can support schools with questionnaires that have been tested in advance, so that they technically form a well-functioning instrument. The prepared material provides the schools with the opportunity to make comparisons between different age groups, and they can also make comparisons with neighbouring schools or with benchmarking schools. A general combination of the results in advance also makes it possible to make comparisons with a population, representing the country as a whole. This is of course a benefit, because if the population is small, changes in attitudes may cause considerable changes in the results. Therefore, it may be useful for the school to be able to compare its results with national results.

The material also includes examples of other evaluation methods in addition to opinion polls. For example, the portfolio method is presented as a method for following and assessing pupils' performances. The portfolio method also provides a good basis for discussing school work with the pupils, and it can be introduced as a channel to the pupil's self-evaluation. The interest in the use of portfolios has increased considerably during the last few years, and the method can be applied in a countless number of ways, depending on the school subject

and age group. In addition, for example follow-up statistics of the pupils' further studies and their success in studies provide the school with important feedback on the prioritisations made and methods used.

The allocation of resources and the responsibility for the results achieved form a question that causes plenty of discussion. The users can check the situation of the schools, with regard to localities and the facilities for the classes 1–6, in order to evaluate the working methods of the school. The material consists of a checklist, drawn up by experts, completed with an assessment scale for an accumulated evaluation of the status of the school. The list can also be used by municipalities, hoping to make an inventory of the situation.

Another method, used quite often, is that the teachers of the school use joint evaluating discussions as a way to carry out evaluation. The presentation, discussion as a method of evaluation, emphasises preparation and preliminaries before the evaluation discussion, and there are also differences compared to every-day discussions. As a method, it may seem that evaluating discussions are easy to introduce, but in reality they require rather comprehensive preparations in order to fill the independently evaluating function. It is often said that evaluation and development are related to each other like two sides of a coin. It can be continued by saying that an optimum result is achieved if both sides are formed as carefully. Carelessly realised evaluation provides a weak basis for development, just as the development of school activity should be accomplished carefully, so as to inspire evaluation.

### **Available for use**

The fact that the material is free and can be accessed on the web does not automatically mean that it is used in all schools. It is clear that it takes time before a piece of material is found, even if it is freely available on the web. According to the information from the year 2000, 30% of those responsible for education have a plan for carrying out evaluation. But a large majority of them have not yet accomplished large evaluations. People have also expressed wishes for more support material and information on evaluation. Self-evaluation material is included in the ten most often used websites, maintained by the National Board of Education, and the response from individual users has been very good.

The self-evaluation material has been built based on the assumption that the schools and municipalities are interested and that they are willing to take responsibility for the development and evaluation of the school. The material has been produced using national tools, but it does not set any requirements for the user to report to a national body. In many municipalities, parts of the material have been utilised for their evaluation strategy and as basis material for analyses, etc. We hope to maintain the spontaneous contact that has been formed with various users, and also that the material can continuously be developed and grow into an open co-operative undertaking with users, rich in dialogue.

<http://www.edu.fi/itsearviointi/suomi> (in Finnish)

<http://www.edu.fi/itsearviointi/svenska> (in Swedish)



# **PART THREE**

## **THEMATIC EVALUATIONS**



## **EVALUATION ON SUSTAINABLE DEVELOPMENT IN EDUCATION**

The National Board of Education made a theme evaluation, taken with a stratified random sample, on the state of sustainable development in 500 educational institutions. The sample consisted of schools of the general (74,2%), vocational (14,4%) and liberal adult education (11,4%). There were representative samples of educational institutions from all the provinces, EU support areas and municipality groups. The number of the Finnish speaking schools was 91 % and the number of the Swedish speaking schools 9 %. In the spring of 1999 the data of the questioning were gathered with the pre-tested questionnaire forms given to the principals, teaching staffs, student unions and non-teaching staffs. The questioning was answered by 429 schools i.e. 85,8% of the whole sample.

The aims of the evaluation were to find out what the sustainable development is in the written and realized curricula, how the personnel have participated in training for sustainable development, what kind of co-operation has been done and how the daily actions belonging to its principles have been carried out. Because of the globalisation of the theme it was also studied how the realization of sustainable development was carried out in schools in other countries. There were five Scottish and five Tanzanian schools as control schools. In addition to these the international environment projects participated by Finnish schools were also looked at.

Sustainable development appears to be clearly more many-sided in the core curricula of the vocational education than in the core curricula of the general education and the schools of the liberal adult education have no core curricula at all. The order of the school types is the same in the contents of the written curricula for sustainable development. The vocational schools e.g. have more programs of their own in sustainable development than the other school types and they are often part of the quality standard of the school. According to the principals Sustainable development is carried out *rather well* in the teaching and contents of science but in other subjects only *to some extent*. In the vocational schools sustainable development is carried out *rather well* in the basic studies, orientation studies and studies common to all sectors. The articles written by experts and the case articles of the schools point out how it is possible to join sustainable development to curricula and their aims.

The schools of the vocational, general and liberal adult education have carried out the teaching of sustainable development most generally as integrated between the subjects (84%). Nearly 45% of the schools that answered the questionnaires reported sustainable development being part of subject entities and equally many carry them out in the theme days, which are most common

especially in general education schools. Sustainable development is being taught more in the vocational basic education than in other school types. However, the student unions of the vocational schools reported that there was *too little* teaching in sustainable development. A group of 26% from the whole sample of the student unions informed that the courses including sustainable development are *too few* and 38 % said *rather few*.

Only 30% of the reply schools reported that they had participated in the supplementary education in environmental topics or in sustainable development. Nearly 90% of this training had been short courses and aimed at teachers. Vocational schools took care of the training of their personnel better than the schools of general education and the schools of the liberal adult education. Nearly half of the vocational schools had participated in schooling promoting sustainable development, whereas in other school types the figure is only 1/4. Based on the answers of the principals and the teachers many daily actions including sustainable development are carried out statistically highly significantly, significantly or nearly significantly better in the schools that have participated in sustainable development training than in the ones with no training.

About 1/3 of the reply schools had named a team or a responsible person to carry out the organising of sustainable development and environmental education. Different groups of the staffs estimated that the amount of mutual co-operation within the field of sustainable development was being done *to some extent*. 39% of all institutions co-operated with an outer partner the most important co-operational partners being local authorities and other schools and institutions. According to the principals schools carry out the principles of sustainable development *rather well* in their daily activities in waste management and kitchen works. In education related things, like the consumption of paper, energy and water as well as in the follow-up of interior temperatures, sorting and recycling of waste, these principles are carried out *rather regularly*. Hazardous wastes are very well transported to appropriate collection sites. Student unions estimated these things almost in the same way as principles, but the teaching staff together with personnels were statistically highly significantly or significantly more cautious in their estimation. Sustainable development is carried out better in Finnish schools and institutions than in the foreign comparison schools.

Students' attitudes towards sustainable development, estimated by the teaching staff and personnel, is to some extent positive. The questioning aimed at the sixth-year classes of basic education showed that the students are well aware of the importance of sorting, recycling and the saving of energy as well as nature conservation, but the attitudes towards waste management as well as the saving of water and energy are statistically highly significantly or significantly more positive in homes.

To compare the carrying out of sustainable development issues between different school types sum variables from the principals' answers, from each school, were calculated and the mean of these is in this report called the parameter of sustainable development. The parameter of the vocational schools

is statistically almost significantly better than that of the general education schools and significantly better than that of the liberal adult education institutions. The parameter of the urban institutions was statistically almost significantly higher than that in the rural institutions. It was especially the urban institutions of free adult education that had a higher parameter than that of the rural institutions.

Antti Rajakorpi & Hilikka Rajakorpi (eds.) *Sustainable Development in Schools and Educational Institutions?* Evaluation 7/2001. National Board of Education.

## THE STAGE OF STUDY GUIDANCE IN 2002

The state of student counselling in 2002 contains the evaluation of student counselling given in basic school, upper secondary school and vocational education. In the evaluation, attention has also been paid to student counselling in transition phases, i.e. when moving 1) from the sixth to the seventh grade of basic school, 2) from basic school to upper secondary school and vocational education and 3) from secondary education to work or further education.

In the evaluation, the most central viewpoints of student counselling were the guidance of growth and development, the guidance of student skills and studying, the guidance of vocational orientation and the guidance to further education, the availability of student counselling, study guidance in transition phases of education and prevention of withdrawal. The evaluation contained inquiries and interviews, which were conducted on pupils/students of basic school, upper secondary school and vocational education (N = 8 147), tutors (N = 502), principals (N = 460) and organisers of education (N = 138) and administrative boards and parents of basic school pupils (N = 4 050).

The evaluation revealed *a growing need and demand for student counselling*, which is a result of changes in working life as well as factors that have increased the flexibility of the school system and the individuality of studies.

*The availability of student counselling* has been evaluated for example by finding out how many pupils/students tutors have: in basic school, tutors have 245 on average, in upper secondary school 288 and in vocational education 510, and the number varies greatly. On the basis of the evaluation, there are deficiencies in the availability of study guidance: not all the pupils/students receive the personal guidance or support they need in their studies and development.

There are differences in *the realization of different sectors of study guidance*. Guidance to further education is very efficient, guidance of student skills is least efficient and especially guidance of vocational orientation is problematic. The evaluation in many ways revealed especially the basic school pupils' great need for information on working life and professions. According to views of principals and tutors, the efficiency of study guidance is far greater than the efficiency of pupils/students. This may be due to schools' follow-up and feedback systems being defective, which results in principals or decision-makers remaining unaware of the need for study guidance. This deficiency is especially problematic also when assessing schools' means of preventing withdrawal.

The evaluation contained three central transitional stages of the Finnish educational system, which have been studied from two viewpoints: from *an individual's viewpoint*, it is a question of whether the pupil/student receives

sufficient information and support in his choices in the transitional stages. *The educational system's viewpoint* concentrates on the smoothness of the transitions.

The schools attend to *the transition from the sixth grade of basic school to the seventh grade* carefully, and the pupils and their parents are familiarized with studying at the next level. Depending on the subject, a third or even more than a half of the parents, however, considered that the information they had been given on their child's transition to the seventh grade had been insufficient.

Throughout the 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> grade, the pupils are prepared for *the transition from basic school to upper secondary school or vocational education*. The evaluation shows that in basic school, the pupils' applying for secondary education in the joint application was well taken care of, but there are many groups of pupils who apparently have not been given sufficient support for their choices, since they have been unable to make decisions on their education: 1) those who, after basic school, have lacked any further plans, 2) those who move to upper secondary school without a clear plan, just to get more time for their vocational choices and 3) those who, after entering vocational education, interrupt their studies or move to another field because of a "wrong" choice. These groups are also in greater danger of dropping out of education and withdrawing from working life as well.

The inequality between *upper secondary school and vocational education channels* was clearly shown in the evaluation. The basic school study guidance co-operated a lot better with upper secondary school than with vocational education. The basic school tutors lacked sufficient knowledge of vocational education, and the tutors themselves considered that they had been given less information on vocational education than on upper secondary school. The pupils' parents claimed that they had been better informed on upper secondary school than on vocational education as well.

Questions on *the transition from upper secondary school or vocational education to further education and/or work* include clarification of further plans and facilities for applying for a student place or a job. The evaluation shows that the organizers of education, the principals and the tutors considered the students to be well aware of the further education alternatives, but only less than a half of the students considered that they had been well informed on different student places.

In the evaluation, the competency of the tutors and the elements of work were also estimated. 79% of full-time tutors had qualifications for the job, but only slightly more than a half of all those who worked as tutors were qualified, which means that almost a half of the tutors (43%) lacked qualifications. The situation is especially alarming among those who have recently started tutoring, 80% of whom lack qualifications for the job. So tutoring, which requires expertise, is usually started without proper education.

## REPORT

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