ETLA ELINKEINOELÄMÄN TUTKIMUSLAITOS
THE RESEARCH INSTITUTE OF THE FINNISH ECONOMY
Lönnrotinkatu 4 B 00120 Helsinki Finland Tel. 601322 Telefax 601753

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Timo Myllyntaus

EDUCATION IN THE MAKING OF MODERN FINLAND

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ABSTRACT: Education has generally been regarded as one of the key causes for the spectacular economic growth in Finland since the mid-nineteenth century. The high rate of literacy has became a cornerstone in the standard explanations for Finnish economic growth. This paper aims to problematise simplified interpretations of the Finnish educational traditions and their role in the stimulating modernisation. It indicates that although the ability to read was extraordinarily widespread among pre-industrialised Finns, their ability to write was conspicuously low even during the first decades of industrialisation. Still in the early twentieth century, semiliteracy was probably more general in Finland than in any other developed or developing country of the time. Despite halfhearted primary education, Finland has over a century ranked high in terms of secondary and higher education. In particular, a high frequency of young people studying for university or other higher degrees has been typical for Finland for the whole industrial period. Therefore in the early years of modernisation, the strength of Finland seems not to be in the widespread full literacy of the masses but in the extensive formal education of the middle-class.

KEY WORDS: Education, literacy, industrialisation, economic development, Finnish economic growth, Finland.

CONTENTS

EDUCATION IN THE MAKING OF MODERN FINLAND

Timo Myllyntaus
University of Helsinki

Introduction[1]

During the past 150 years, Finland has experienced a profound economic transformation. Considering in an international perspective, the change has been so exceptionally rapid that social scientists have met difficulties in presenting plausible explanations for this rags to riches success story. The country has rather poor and limited natural resources, the most important of which is timber. In addition, it has mediocre endowments of hydropower and modest mineral deposits (copper and iron). No coal, oil or natural gas has so far been discovered. Moreover, conditions for agriculture are unfavourable due to poor soils and a brief growing season. The brisk economic growth cannot be attributed to the

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[1] Paper prepared for the Session A-5: "Education and Economic Development since the Industrial Revolution" at the Tenth International Economic History Congress, Leuven, Belgium in August, 1990. An earlier version of it was presented at the pre-session symposium in Valencia, Spain on September 14-16, 1989, hosted by the Universidad Internacional Ménendez Pelayo and the Spanish Ministry of Education.

significant inflow of foreign capital and entrepreneurs either, because the country has relied mainly on its own resources. Development was neither boosted by developed cultural traditions, by a strong and well-established government apparatus nor by the exploitation of overseas colonies. Consequently - as a result of the lack of other good explanations - several scholars have credited the swift economic development to the education and qualities of human capital.

If we, however, consider the education of the Finns historically, we find some paradoxical and contradictory features. Finland was one of the latest countries in Western Europe to introduce compulsory school attendance (1921) and according to international statistics, at the turn of the century the proportion of fully literate persons (able both to read and write) was lower in Finland (39%) than in some countries-which are at present known as developing or Third World countries-such as Argentina (47%) and Cuba (45%).[2] Nevertheless, in respect to the ability to read, this agrarian periphery was clearly ahead of various major contemporary European economies with developed industry and long cultural traditions, such as England and France. As early as 1850, over 70 per cent of the Finns could read and fifty years later, the percentage had risen to 98.5.[3] In addition, although Finland remained a peasant society for fairly long, during the whole century from 1875 to 1975 the percentage of university students constituted a larger share of

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[2] Progress (1953), pp. 33, 78, 88; *Schneider* (1982), pp. 212.

[3] Egil Johansson has earlier speculated how the Finnish authorities and the statisticians of the League of Nations and UNESCO responded to these obscurities of the Finnish data. *Johansson* (1981), pp. 153-54; *Cipolla* (1969), pp. 113-14; OSF 6:37 Population Statistics (1905).

the age group of 20 - 24 years than in Western Europe on average (See Table 5).[4]

This paper examines the role of education in the transformation of Finland from a traditional peasant society into a modern industrialised economy. The question of literacy has been emphasised particularly because several scholars have regarded it as a key precondition for the Industrial Revolution.

Literacy

Like in many other protestant countries, literacy in Finland has long traditions.[5] While the country was a part of the Swedish Kingdom, the first proposal for organising general primary education was made by the Bishop of Turku Johan Gezelius, in 1683, in his book Methodus Informandi. The first concrete result of the current discussion on education was the promulgation of the Swedish Church Law of 1686 which declared it to be the duty of every citizen to learn to read and in addition, he or she should learn by heart a considerable number of religious texts. Those who had not, on attaining maturity, fulfilled their

[4] To describe in some respects similar features (e.g. poverty and high literacy) of nineteenth-century Sweden, Lars G. Sandberg coined the concept "impoverished sophisticate" in his articles which sparked off a debate on Swedish peculiarities. *Sandberg* (1978); *Sandberg* (1979); *Kindleberger* (1982) and *Sandberg* (1982a).

[5] *Weber* (1922), pp. 17-206.

duty, were subject to various punishments of a humiliating nature. Literacy was also made a condition for the enjoyment of civic rights and an illiterate person - man or woman - was not even allowed to marry.

While parents were obliged to teach their children to read at home, the Church established permanent parish schools and ambulatory village schools to complement the religious education of children. From the eighteenth century, the ability of adolescents to read and their knowledge of religion were improved and examined in the confirmation class preceding the first communion. Moreover, everyone over the age of seven years was obliged to undergo a special ecclesiastical reading examination once a year. In sparsely populated Finland, which was recurrently stricken by famines and wars, the law of 1686 was put in practice more slowly than in the more populous and affluent areas of the Swedish Kingdom.

On the local level, the progress in reading and catechism knowledge has been well documented in both Sweden and Finland since the seventeenth or eighteenth century. On the basis of the church examination registers, Egil Johansson has estimated that the reading campaign which the church started in the late seventeenth century was successful. By 1750 it raised the Swedish national literacy rate for the population of about 10-15 years old or older to somewhere between 65 and 95 per cent.[6]

[6] *Johansson*, pp. 179-80.

Table 1. The percentage* of persons able to read in some parishes of the diocese of Turku, 1730 - 1760.

Period	Parish	%	Source
ca 1730	Laitila	35	Vicar's announcement
	Rymättylä	60	"
	Pyhämaa	65	"
	Tammela	40	"
1732-40	Rauma	"all"	"
	Pori, town and nearby rural parish	90	"
	Sääksmäki	30	"
	Jokioinen	45	"
1750-60	Jokioinen	75	"
	Pori, nearby rural parish	75	Communion register
	Kalanti	75	"
	Salo (South-West Finland)	75	"
	Laihia	75	"
	Vähäkyrö	75	"
	Lapua	75	"
	Kurikka	80	"

* The percentage of the total adolescent and adult Lutheran population.

Source: Mikko Juva, "Suomalaisen maaseudun valveutumisesta ennen ns. ensimmäistä kansallista heräämistä", Historiallinen aikakauskirja 61 (1963), p. 257.

In Finland, many local studies have been made on the development of literacy during the last 100 - 150 years of Swedish rule (1155-1809). According to them, in the diocese of Turku which was the western one of the two Finnish dioceses, the ability of people to read advanced more quickly than in the eastern one, the diocese of Porvoo. Table 1 illustrates the level achieved in some parishes of the former by the mid-eighteenth century. In the towns on the west coast, such as Rauma and Pori, the literacy rate was about 90 per cent or over, and in rural parishes it varied between 30 and 80 per cent. Pentti Laasonen, in turn, carried out a case study encompassing 13 parishes in North Karelia a province often considered as one of the most backward areas in the diocese of Porvoo.[7] Following the division made in the church examination registers, Laasonen separated literate persons into "good readers" and "poor readers" and studied the data in three benchmark years (1740, 1770 and 1800). During the period of those sixty years, the proportion of "good readers" rose from 20 per cent to 58 per cent of all those who received Communion, while the corresponding percentage for the total of "good" and "poor readers" increased from 30 to 70, as shown in Table 2.[8] Although the exact numeral estimates for the average national literacy rate are lacking, various historians agree that by the mid-eighteenth century, literacy was fairly widely spread all over Finland.[9] Tables 1 and 2 as well as the research results of several

[7] The thirteen parishes are Eno, Ilomantsi, Juuka, Kaavi, Kesälahti, Kiihtelysvaara, Kitee, Kontiolahti, Liperi, Nurmes, Pielisjärvi, Rääkkylä and Tohmajärvi. *Laasonen* (1967), p. 340.

[8] *Laasonen* (1967), pp. 339-44.

[9] *P., O.*, (1875), pp. 36-39; *Vikman* (1910), pp. 186-95, 203-4, 215-16, 249-50; *Mustakallio* (1917), pp. 30-34; *Juva* (1963), p. 258; *Luttinen* (1981), pp. 225-62.

historians support the hypothesis that at least 30 per cent of adult Finns had learned to read by the 1750s.

Table 2. The proportion of persons able to read of all those who received communion in 13 parishes of North Karelia, 1740 - 1800.

	1740 %	1770 %	1800 %
Good readers	20	52	58
Poor readers	10	6	12
All readers	30	58	70

Source: Laasonen, Pentti, Pohjois-Karjalan luterilainen kirkollinen kansankulttuuri Ruotsin vallan aikana (Kuopio, 1967), p. 340.

Since the early 1960s, scholars have widely assumed that a country should attain an adult literacy rate of 30 - 40 per cent before industrialisation and sustained economic growth could take place with a lag of one generation. This, so called "threshold theory" was first presented by the economists C. Arnold Anderson and Mary J. Bowman.[10] Some years ago Lars G. Sandberg, an economic historian from Ohio State University, wrote a stimulating historical article concerning the long-term relationships between human capital and economic development

[10] See their article "Concerning the Role of Education in Development" (1963), pp. 247-79.

in Europe. Some of those who read his article in the spirit of Bowman and Anderson perceived him as trying to launch a new hypothesis on a longer lag of 120 years between establishing widespread adult literacy (the ability to read) and attaining high per capita income.[11]

These two hypotheses provide an inspiring framework for studying the Finnish case. Although it is possible to make estimates only on the basis of inadequate material, one might claim that Finland, just like Britain, crossed the "literacy threshold" of 30 - 40 per cent by the mid-eighteenth century.[12] This observation leads to an interesting question: If the ability to read is so decisive for the onset of industrialisation and if this key prerequisite was fulfilled in Finland as early as about 1750, why did the industrialisation of the country not actually start until about 150 years later?

I would argue that in such a peripheral and underdeveloped country as eighteenth century Finland, mere basic literacy - especially when it was predominantly harnessed for religious purposes - has rather an insignificant impact on modernisation and economic growth. It was as useful as a cart without a horse. Consequently, due to the following reasons, literacy remained as a severely underused reserve. Firstly, the great majority of the Finns could only read and understand texts in their native language, Finnish, whereas the apparatus of the government, the nobility, the bourgeoisie and a small minority of the peasant population living on the coast communicated in a quite different language, Swedish. Secondly, the ability of ordinary Finns to read was rather poor, and as a rule their literacy was hardly functional in secular

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[11] *Sandberg* (1982b), pp. 675-97.

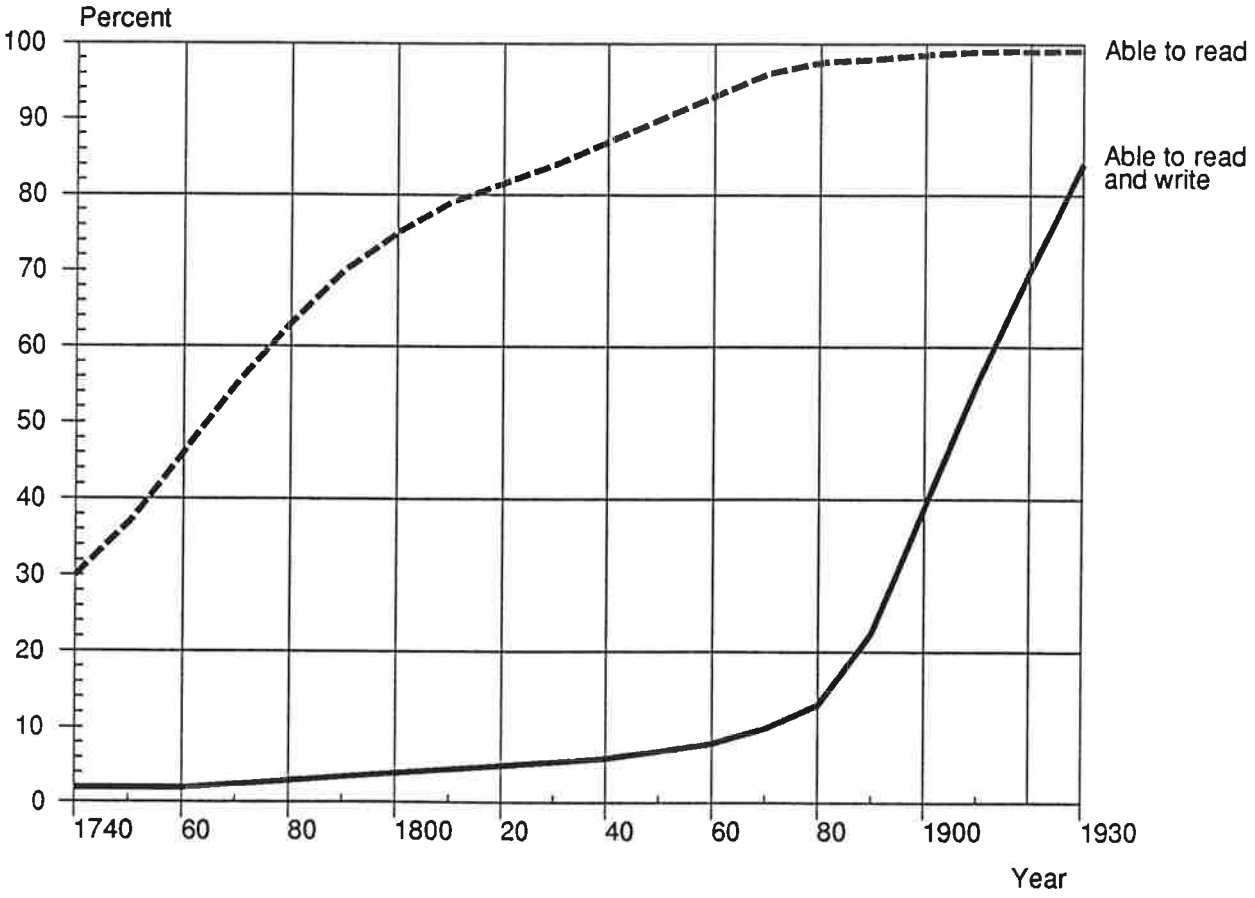
[12] *West* (1978), pp. 369-82; *Pollard*, (1989), pp. 125, 206.

context. Primary education was half-hearted and it did not motivate people to use their schooling actively in everyday life. Priests often looked through their fingers if poor readers knew the central religious texts by heart. In that education system, the ability to read was not the main thing which was to know the vital words of God.

Thirdly, at the time only few publications had been printed in Finnish and the great majority of them (about 80 % between the years 1544 and 1808) were religious. Literature available to ordinary Finnish peasants consisted of an ABC-book, the smaller catechism, a psalm book and the new testament. Such literature was not a very useful store of information for modernising traditional agriculture, setting up industrial firms or becoming acquainted with the recent discoveries in science. "Perhaps the biggest error in the education of people was that it was limited merely to religious knowledge and neglected all secular matters. Not even perfect literacy would help a peasant who was most eager to learn to acquire any knowledge on nature and the circumstances of human beings", lectured a young activist of the Finnish national movement, Georg Zacharias Forsman (1830 - 1903) in 1852.[13]

[13] Later he changed his Swedish name to its translation in Finnish, Yrjö Sakari Koskinen, which was not an uncommon decision among the Fennomans. The fashion to change non-Finnish surnames to Finnish ones reached its peak in 1906/1907 when thousands of Finns changed their names. *Koskinen* (1904), p. 27.

Figure 1. Literacy in Finland, 1740 - 1930 (Percentage of population 15 years old or over)



Sources: See Tables 1, 2 and 4.

It was not until the early nineteenth century that serious attempts were made to print secular literature in Finnish. One of the significant obstacles for this was that the Russian authorities strictly censured publishing in the Grand Duchy in general and in Finnish in particular. For some years in the 1850s, they literally forbade the publishing of anything in Finnish but religious (or purely economic, practical) publications because they were afraid that revolutionary political thinking would spread from the Continent to Finland. Another obstacle was the lack of educated authors who were able to write modern secular literature in Finnish.

After the Crimean War (1853 - 1856), the censorship was somewhat relaxed and publishing in Finnish increased substantially. The most rapid growth took place in the publishing of newspapers, and the press became an important weapon in the political struggle between nationalist factions. The most significant of them were the linguistic factions, the Fennomans and the Svekomans.[14] As a rule, all political movements founded their own newspapers as soon as they could. During the second half of the century, the number of newspapers increased by a factor of ten and the growth rate of the printing industry was one of the highest of any industry in the country. In 1900 there were 58 Finnish and 28 Swedish newspapers. At the time, there were 38 towns

[14] The Fennomans represented a nationalist movement of the nineteenth century which aimed to make the Finnish language at first equal with Swedish and then the sole official language in the country. They also attempted to promote the use of the Finnish language in cultural, academic and economic life. Their objective was to strengthen the national and cultural identity of the Finnish-speaking Finns. The Svekomans, in turn, represented a political movement which defended the interests of the Swedish-speaking minority in Finnish society against the pressure of the Fennomans and the Russian government. *Liikanen* (1988), pp. 421-38.

in total and only five small towns lacked a local newspaper, while even many medium-sized population centres had two or more competing papers.

The vigorous development of the Finnish press is illustrated in Table 3 by comparing that to the press in Sweden, Denmark and Russia. The last column shows that Finland precipitated headlong in a fifty year period (1850 - 1900) from an "East European" number of 117,000 inhabitants per newspaper or periodical to a comparatively low "West European" number of 12,000. The Grand Duchy could not, however, catch up with the leading Scandinavian countries, Denmark and Sweden, which in this respect then ranked near the top in Europe.[15]

[15] The method of Table 3 represents only one rough way of measuring the extent and activity of the press. It is noteworthy that although Finland had fewer newspapers than Sweden, its papers were on average issued more frequently. In Finland, 66 per cent of all newspapers appeared three or more times a week in 1900, whilst in Sweden only 37 per cent of the papers reached the same frequency. When the relation of numbers of newspapers was 1 to 4 between these two countries, the relation of the total amounts of published newspaper issues in a week was 1 to 3 (the relation of the population was 1 to 2). *Hildebrand* (1914), p. 484; *Salokangas* (1979), pp. 5-6.

Table 3. The number of newspapers and periodicals, and its relation to the population in four countries.

Country	Year	Newspapers	Periodicals	Total	The number of inhabitants per one newspaper or periodical
Finland	1850	9	5*	14*	116,930
	1880	34	26*	60*	34,350
	1900	86	133*	219*	12,130
Sweden	1850	80&	90	170&	20,420
	1880	183&	161	344&	13,270
	1900	350&	383	733&	7,010
Denmark	1897	208	474	682	3,590
Russian	1878	..	..	500	195,400
Empire#	1897	..	..	921	137,230

* Excluding occasional magazines.
& Including political newspapers and advertisement papers.
\# Excluding Finland.

Source: Timo Myllyntaus, The Growth and Structure of Finnish Print Production, 1840 - 1900, Communications no 16, Institute of Economic and Social History, University of Helsinki (Helsinki, 1984), p. 13.

Before the mid-nineteenth century, ordinary people were reluctant to learn to read and master religious texts by heart. They considered it unnatural that any child would bother to learn to read voluntarily and therefore, the skill of reading must be forced into his or her head by whipping.[16] Later, the attitude to reading gradually

[16] *Liakka* (1942), p. 7.

changed when an increasing amount of interesting secular publications became available, such as newspapers, journals, fiction and nonfiction. In a few decades, reading turned to a popular and highly valued spare time hobby even among the lower layers of society. By the end of the century, several thousands peasants and workers became subscribers of local newspapers, while the lower middle classes, domestic maids and the young people in general became regular customers of various public libraries as well.[17]

At the turn of the century, the Finnish mass media sector was fairly well advanced compared to the rest of the economy. This was a significant factor from the viewpoint of modernisation of the whole of society. The viable press provided a potential channel for diffusing information on new developments in the outlook on life, politics, the economy and technology.

Table 4 provides a fairly detailed description of the literacy rate and its development in Finland between 1880 and 1930. It is based on official and ecclesiastical statistics; the question on literacy has not been asked in the population censuses taken after 1930.[18] The figures of Table 4 indicate that illiteracy, the inability to read, was almost negligible after the turn of the century. The proportion of fully literate, or people who could both read and write, was also rapidly increasing during the time span studied. Internationally, this progress was excep-

[17] In 1875 the number of public libraries in Finland was 390, and in 1911, including the libraries of various societies, it was 2,500. Libraries along with municipal elementary schools were cultural institutions that undoubtedly advanced active literacy. *Myllyntaus* (1984), p. 28.

[18] According to an estimate, in Finland there are at present 100,000 persons (2.6% of the total adult population) who are formally literate but still lack functional literacy - being able to read and write only very slowly and poorly - or who are completely without these abilities.

tionally swift and the difference of the literacy rate between the sexes was very small even before modernisation was embarked upon. The Finnish peculiarity, a high semi-literacy (the ability to read only), was not found on the same scale in any other country of the early twentieth century, which period UNESCO investigated in one of its first international studies on fundamental education. However, this phenomenon must have existed in all countries but only a few of them have surveyed it with a similar diligence as the Finnish statistical authorities.[19] Egil Johansson has estimated that an extensive semi-literacy prevailed in Sweden up to 1850 when 90 - 97 per cent of the population over nine years old could read but less than 50 per cent could also write. There the gap between the fully literate and the semi-literate was nearly bridged by World War I. This means that in Sweden the final elimination of semi-literacy and the onset of swift industrialisation took place simultaneously in the period 1850 - 1913, and Finland experienced a similar phenomenon two or three decades later.[20]

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[19] In many countries literacy researchers have based their studies on marriage registers. They assume that if a bride or bridegroom could write her/his name, she/he was fully literate, i.e. able to read and write. This is, however, a very rude and inadequate method to measure literacy skills; nowadays a great deal of children learn to write their own names long before they able to read even the most simple text and nobody dare call them literate. Progress (1953), pp. 21-22, 26-32, 168-74, 178-81.

[20] *Johansson* (1981), pp. 178-80.

Table 4. The level of education or literacy in Finland, 1880 - 1930, in percentage.

Year	Persons having more than primary education	Other persons able to read and write	Able to read only	Not able to read or write
1880[a]				
Both sexes[c]	1.9	11.2	84.4	2.5
Male	2.1	14.1	81.0	2.8
Female	1.7	8.5	87.6	2.2
1890[a]				
Both sexes[d]	2.0	20.5	75.4	2.1
Male	2.1	23.8	71.9	2.2
Female	2.0	17.3	78.7	2.0
.....				
1900[b]				
Both sexes		38,8	59.7	1.5
Male		41,1	57.3	1.6
Female		36,5	62.1	1.4
1910[b]				
Both sexes	5.0	50.3	43.6	1.1
Male	5.1	52.3	41.3	1.2
Female	4.9	48.4	45.7	1.1
1920[b]				
Both sexes	5.3	64.6	29.1	1.0
Male	5.4	65.6	27.8	1.1
Female	5.2	63.6	30.3	0.9
1930[b]				
Both sexes	6.6	77.5	15.0	0.9
Male	6.4	78.5	14.1	1.0
Female	6.8	76.6	15.8	0.8

[a] Population 10 years old or over
[b] Population 15 years old or over
[c] By estimate 60,000 literate children under 10 years have been subtracted from the total number of persons "able to read only" dividing the group between sexes on a fifty-fifty basis.
[d] According to parish priests, there were 123,740 literate children under 10 years. Here they have been subtracted from the total number of persons "able to read only" dividing the group between sexes on a fifty-fifty basis.

Sources: OSF 6:11-76, Population Statistics 1880 - 1930 (Helsinki, 1885 - 1933).

In Finland, semi-literacy was a problem of rural areas primarily. For example in 1910, 50 per cent of rural people over 14 years could both read and write and 49 per cent could only read, while among the urban dwellers, the corresponding percentages were 85 and 14.[21] The level of elementary education was quite equal among industrial workers and the urban population in general. Around 1910, the proportion for fully literate varied between 81 per cent and 91 per cent of the workers in the main manufacturing sectors.[22]

One might suspect the reliability of Finnish official statistics because of their high literacy rates. They are, however, supported by independent, foreign statistics. For example, in 1909 the U.S. Immigration Commission examined the reading ability of adult, male, foreign-born workers employed in mining and manufacturing occupations in the USA. According to the results, 99.1 per cent of interviewed Finnish emigrants could read. Only four out of 35 ethnic groups surpassed the Finns; they were the Swedish (99.8%), Norwegians (99.7%), Scottish (99.6%) and Danish (99.2%). The literacy rate of the Finns was higher than that of the Canadians, Dutch, English, French, German or Irish, for instance, although a smaller proportion of them (53.6%) had resided in the United States for five years or longer than of the mentioned nationalities (70.1% - 90.8%).[23]

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[21] OSF 6:45 Population de la Finlande au 31 December 1910, Selon les registres ecclésiastiques, Tome I (1915).

[22] For example, under 1% of workers in the Finnish engineering industry was illiterate, 8% could read only and 91% percent were fully literate. In Russia, the literacy rate of workers rose from 38 to 70 per cent in metallurgy and from 66 to 77 per cent in metalworking between 1897 and 1918. *Snellman* (1911), pp. 151-52; *Crisp* (1978), p. 392.

[23] *Higgs* (1971), p. 424.

Primary Education

Fundamental education did not change when Finland was annexed as an autonomous Grand Duchy into the Russian Empire in 1809 because practically the entire Swedish legislation was kept in force. The ability to read thus remained compulsory for adult protestants (98% of the total population) although there was no obligation to attend formal school education.

The first significant step forward in formal elementary education was a primary school [*kansakoulu*] reform in the 1860s. Then the responsibility for elementary education was transferred from the church to the municipalities which could receive state subsidies for maintaining schools. At the same time, teacher training was started and the curriculum was reorganised and improved. The problem of the reform was that it was voluntary for (rural) municipalities to set up schools. *Kansakoulu*, the people's school, was intended for all children but because, up to the interwar years, the offspring of the upper class often went to private primary schools, *kansakoulu* was identified as the school of peasants' and workers' children. In some respects, a considerable proportion of the lower class families was for a long time reluctant to send their youngsters to primary school for four years even if there were no fees. Particularly in agriculture, children were then regarded as a valuable labour force.

The next reform was the statute of 1898 on school districts. According to it municipalities were obliged to establish a school if the parents of 30 children in any district within a radius of 5 km wanted a municipal primary education for their offspring. However, it was not

compulsory for children to get registered for or to attend school. Therefore, a great number of rural youth still received education only at home or in the still existing ecclesiastical schools which were modest and short-term. These forms of education could, however, provide that kind of teaching which the church required of any normal citizen. In 1910, the Finnish parliament stipulated a law on obligatory school attendance but the ruler of the Grand Duchy, the Russian Tsar, refused to confirm it. Therefore, compulsory schooling was realised only in 1921, i.e. nearly four years after Finland gained its political independence. Nevertheless, before going to the four-year primary schools, children were prepared in the traditional way to read and write at home or at ambulatory ecclesiastical schools even in the 1920s.

The main problem of early Finnish primary education was that before the 1920s, only a proportion of children within the relevant age group went to *kansakoulu*. Just at the turn of the century, only 34 per cent of rural children went to primary school, whilst twenty years later - on the eve of compulsory schooling - the corresponding figure was 68 per cent.[24] *Kansakoulu's* curriculum and the quality of education were, however, considered equal or even better than those of the primary schools in Sweden.[25] Proposals to make the curriculum of *kansakoulu* predominantly religious or vocation-oriented were rejected even in the reform of the 1860s. The leading national expert of the field, "the father of *kansakoulu*" Uno Cygnaeus aimed to provide a broad basic primary education for all children independent of their social class. His

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[24] In 1880, about 9% of all children at the relevant age group went to primary school, in 1890 the percentage was about 20. In 1937, i.e. sixteen years after the introduction of obligatory school attendance, the figure was only 87%. *Isosaari* (1973), pp. 43, 69.

[25] *Halila* (1980), p. 169.

goal was to develop the whole personality of the child. According to his educational programme, the primary task of *kansakoulu* was to educate children to work hard and seriously, then to follow strict discipline and behave obediently.[26] These were features which were not totally unrelated to labour productivity and economic growth.

Although *kansakoulu* taught practically all its pupils to read, write and count as well as provide various kinds of basic knowledge, it has been considered that its main achievement was ideological education. In his work on the history of the primary school system, Aimo Halila wrote: "The great strength of our *kansakoulu* was loaded in its morale, in its ideological, patriotic and religious spirit."[27] While traditional ecclesiastical education taught enduramce of the hardships of the severe climate as well as the calamities of famines and epidemics, *kansakoulu* tried to instil a struggling and enterprising attitude. *Kansakoulu* trained children to search for new solutions to their problems and attempted to encourage their national and personal self-esteem. The thing that several generations learned most clearly at the old primary school was the nationalist and religious structure of social values. Hence, *kansakoulu* advanced the unity of the Finnish nation. It provided simple, unproblematic explanations to the relationship of national and individual goals. Remoulding values and attitudes at school contributed to the transformation of the stiff agrarian Finns into more flexible persons adaptable to economic and technological changes.

In the 1940s and 1950s, *kansakoulu* was extended to last from seven to nine years and its curriculum was improved. During the 1970s,

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[26] *Cygnaeus* (1910), pp. 192-98.

[27] *Halila* (1950), p. 425.

the government made an extensive reform in primary and secondary education; *kansakoulu* was replaced by a nine-year comprehensive school which prepares young people for vocational training or upper secondary education. A child begins this obligatory school in the year he/she turns seven. The comprehensive school and services provided by it (textbooks, school meals and transportation over 5 km) are free of charge. The cause for the great reform of the 1970s was that the new, more cohesive comprehensive school would better match the requirements of current societal and economic developments than would the old school system.

Secondary Education

The Finns have generally been bound to appreciate scholarship highly and have viewed secondary and higher education as a path to upward social mobility. They have been proud of the fact that not only the upper classes but also the lower classes - especially the peasant population - showed interest in educating their offspring. If we evaluate the results of this activity in a European comparison, we find that social mobility in Finland was rather an extraordinary phenomenon. Considering first the destination of upward mobility, the composition of the upper classes, then we find a great number of social climbers among them. An unusually large number of the members of the upper classes have originated from the peasant or worker population. The regular Finnish success story includes a rise from a shabby brood in a humble rural family to the cream of society by means of self-sacrifices, determined

stamina and diligent studies. The main explanation for this phenomenon is that the upper and middle classes were very small in numbers and thus there was space for sundry newcomers. Industrialising society demanded professionals, officials and entrepreneurs; social discrimination would have suppressed the modernisation of society.[28]

By contrast, when appraising the starting point for the social rise, the lower classes, we fint that the frequency of upward mobility in Finland has not been exceptionally high in an international perspective - on the contrary, it was rather modest. This is attributed to the relatively large size of these strata in Finnish society and due to economic and institutional drawbacks, only a small section of their members had the opportunity to break the class boundaries.

The grammar school [*oppikoulu*] presented the traditional form of secondary education in Finland. The attendance in this school was distributed unevenly between social classes and regions. In the late 1860s, two thirds of the pupils of grammar schools came from the families of gentlefolk. At the turn of the century, the share of pupils from the highest stratum, called in the statistics "officials", was 29 per cent and after World War II, their share declined to under 15 per cent. By contrast, the proportion of the offspring of the middle classes, i.e. craftsmen and small tradesmen, rose from 12% to 42% between 1880 and 1920, but decreased thereafter. The great change took place in the social composition of the pupils of the grammar school in the late 1940s; since then half the pupils or even more came from the families of workers or farmers.[29]

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[28] *Laaksonen* (1962).

[29] *Kiuasmaa* (1982), pp. 97, 243, 401-402.

From 1870 to 1950, the number of pupils in *oppikoulu* doubled approximately in every twenty years, but between 1950 and 1970 it trebled. In the 1930s, the authorities became worried about the "excessive flood of new secondary school graduates because only 75 - 80 per cent of them could be accepted in the universities of the country". Consequently, the government set up a committee to find methods to counter this "flood."[30]

Languages have always had a strong emphasis in the curricula of the Finnish grammar school. From the first official school regulations of 1649 up to the mid-nineteenth century, about 3/4 of the weekly hours of the grammar school were reserved for Latin, Greek and/or Hebrew since these schools were designed for future priests.[31] Because in these early secondary schools, all education took place in Swedish, Finnish-speakers had to learn that language even before entering the school. At the time, it was typical that in the course of schooling, a Finnish-speaker changed not only his first language but also his surname. After the school reform of 1872, the pupils of the grammar school spent half of their time at school in learning languages (the mother tongue, "the second national language" {Swedish or Finnish}, Latin, Russian, and German).[32] In the late nineteenth century, along with classical lyceums, new lyceums [*reaalilyseot*] with a modern curriculum were set up. They were preparing pupils for the posts of civil servants and taught more modern languages instead of classics. At the turn of the century, Russian became the main subject at boys' schools due to

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[30] *Isosaari* (1973), App. table 5; *Kiuasmaa* (1982), pp. 227-228.

[31] *Isosaari* (1973), p. 11.

[32] *Isosaari* (1973), p. 25.

the politics of russification. At the highest point, in 1901, Russian was taught for 40 hours per week in those grammar schools.[33] A few years later, the tsarist policy of russification was relieved and the Finnish authorities gave more emphasis to the German language at the expense of Russian. After Finland gained its political independence, the teaching of Russian was abolished almost totally, whereas German became the dominating foreign language. In addition, the importance of Finnish, English and French increased in the interwar grammar school. In the post-1945 period, pupils have still been taught at least three languages: the mother tongue, "the second national language" and one foreign language, which has most often been English.[34] At present, the mother tongue and two other languages account for a third of the compulsory weekly lesson hours on the upper stage of the comprehensive school.[35]

One might claim that the teaching of various languages for teenagers is a waste of time and resources. Nevertheless, in a small country with a first language that only few foreigners understand, an extensive linguistic education is necessary. A tiny linguistic group cannot afford to produce all indispensable literature or translate it into its own language.[36] In Finland, a great proportion of university textbooks is still in a foreign language. Moreover, it is good for international communi-

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[33] *Isosaari* (1973), p. 56.

[34] At upper secondary school [*lukio*], pupils have studied three to four languages besides their mother tongue.

[35] Development (1988), p. 29.

[36] Although more book titles (0.6) per 1000 inhabitants were published in Finland in Finnish as early as 1907 than in Germany (0.5), in France (0.3), in Britain (0.3) and in the USA (0.1) in their respective languages, the absolute number of book titles in Finland was only 5 per cent of the German figure and 16 per cent of that in the USA. *Myllyntaus* (1984), p. 8.

cation as well as for the swift transfer of technology and other information that many citizens know at least one major foreign language. The great emphasis on linguistic studies has, however, made the Finnish secondary education very humanistic. Only in recent decades have the weekly lesson hours of mathematics, physics, chemistry and biology increased at the expense of music, art, religion, history and social studies.

Another problem has been that in the great expansion of secondary education the main stress was for schools to prepare young people for higher education, primarily for universities, while the development of technical and vocational education has been neglected. Although formal technical and commercial schooling started on a small scale in the 1830s and 1840s, it expanded slowly. In vocational education, a substantial increase took place only during last three decades. At present, vocational training in Finland is the second most extensive in the Nordic countries, just after its counterpart in Denmark.[37] During the period of industrialisation, technical and vocational education did not for a long time match the needs of the economy. For example, the Grand Duchy provided no vocational education in mechanical and chemical woodprocessing technology despite the fact that sawmilling, pulping and papermaking were really large and rapidly growing industries. Drawbacks

[37] At the close of the nineteenth century, the Finns adopted the Danish educational innovation, Gruntvigian folk high school, which became popular among rural youth. There are at present 90 folk high schools with a total of 6,400 pupils in programmes of 12 weeks or more and 41,600 pupils in shorter courses. They are boarding schools that provide general education and sometimes also vocational courses. During this century, civic and workers' institutes were set up for adult education all over the country. In 1987, 278 institutes had 629,000 students or 13% of the total population of 5 million. Development (1988), pp. 123-29.

in technical and vocational education caused a shortage of technicians and skilled workers especially in the new, science-based industries.

Although Finnish secondary education has never been very well adjusted to match the requirements of economic growth, public opinion has by and large been satisfied with its curricula and the quality of its teaching. In public discussions, language studies were considered the most interesting topic; they were debated more than the rest of curricula altogether. An illustrative example of how present Finnish primary and secondary education are evaluated is seen in the case of Finnish families who had earlier emigrated to Sweden but have since returned to their home country. For them the most important single cause for the return has been the preference of "a demanding Finnish education" to "an inefficient Swedish schooling" for their children.

Higher Education

In Finland, universities have had a great national - and recently also regional - importance. From 1640 to 1907, the University of Turku/Helsinki was the only institution of higher education in the country.[38] In 1920, there were five of them and at present their number is 21. Most of these institutions have been established in the provincial centres during the postwar years. Despite the substantial growth of enrollments in higher education, there are at present first year university places for less than half the secondary school graduates and so a

[38] In 1828 the University of Turku was moved to Helsinki which had few years earlier become the new capital of the Grand Duchy of Finland.

numerus clausus operates. Annually, about 12,000 new students, or 16 per cent of the age group, enter higher education.

For Finland a high frequency of young people studying for university or other higher degrees has been typical for the whole industrial period. Using the number of students in national universities and other equivalent institutions per 1,000 persons in the age group 20 - 24 years as an indicator for the scope of higher education, Finland has been among the five leading countries in Western Europe since the mid-1880s, as shown in Table 5.[39] In addition as in Scandinavian and Eastern European countries, studying abroad was relatively frequent for Finland, especially before World War I. For example, if we consider the age groups of the members in the Association of Electrical Engineers in Finland who had the opportunity to take the engineer's degree before July 1914, a clear majority (59%) studied abroad - generally in Germany- for about one year or more.[40] Taking into account higher studies both at home and abroad, the willingness of Finnish youth to undertake higher studies was extraordinary high during the first half of the twentieth century. Only in the 1960s and 1970s, did the growth slow down relatively and some West European countries, such as Denmark, Sweden and Ireland, have caught up with the Finnish level.[41]

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[39] *Schneider* (1982), p. 224.

[40] Suomen sähköinsinööriliitto (1951).

[41] *Schneider* (1982), p. 224.

Table 5. The number of students in higher educational institutions* per 1000 inhabitants in the age group 20 - 24 in various European countries.

Jahr	AU	SC[a]	DA	FR	FI	SZ[b]	SW	IR[c]	IT	NO	BE	DE	NL	GB[d]	EW[e]	Jahr
1840													6			1840
1850											4·		4			1850
1855											5·		5			1855
1860										3	5·		5			1860
1865										3	5·		4			1865
1870							6.	6.		5	6·	3	5			1870
1875	8.			5	(5)	7.	6.		4	4	7·	4	6			1875
1880	7.			(5)	6	8	8.	9.	5	4	10	7	4			1880
1885	9.			(6)	8	8	9.		7	9	(11)	8	6			1885
1890	9.			6	10	8	9.	8.	8	10	11	(8)	7			1890
1895	10.			9	9	8	8		11	7	(9)	8	7			1895
1900	11.			11	10	10	8		12	8	9	9	6			1900
1905	15.			12	12	14	9		11	8	11	11	9			1905
1910	19.	19..		15	12	13	11·	9	9	10	13	13	10			1910
1915			18	16·	16	18	13·	9	10	11	14··	11	9			1915
1920	40	28	(19)	17	12	20	15·	14	17	12	17··	19	14	12	8	1920
1925	36	22	20	18	13	17	16·	13	13	15	14·	15	14	12	10	1925
1930	42	26	23	25	20	16	18·	18	12	17	13··	20	17	13	10	1930
1935	35	24	26	28	27	23	21·	20	15	19	15·	12	17	15	12	1935
1940	26·		31·	41·	28	32	22·	22	27·	21·	24··	15·	(17)	(13)	10	1940
1945		25	39.	32	42	40	23·	29	45.	30.			27	17	14	1945
1950	45	43	44	47	44	35	32·	35	35	31	(32)	31	37	28	23	1950
1955	44	43	42	60	56	33	46·	44	36	27	(40)	36	38	31	25	1955
1960	82	56	54	79	74	35	70·	69	49	42	54	46	51	40	31	1960
1965	93	89	87	148	108	47	103·	94	86	71	89	62	66	60	48	1965
1970	101	91	123	163	128	65	168·	103.	136	90	104	93	85	66	49	1970
1975	160	110	193	209	181	89	193	103	188	130	111	140	112	94	65	1975

* Including students in universities, universities of technology and business administration, universities of dental and veterinary medicine, agriculture, forestry and mining; excluding higher vocational school (e.g. Ingenieurschulen, polytechnics) and educational institutes for primary school teachers.

Upper line: about 20 students per 1000 persons in the age group 20-24.
Lower line: about 100 students per 1000 persons in the age group 20-24.

a) universities only; b) excluding foreign students; c) 1910 - 1920 the territory within the borders of 1921; d) including "full-time students in central institutions of further education" (Scotland) and "students studying for university and other higher degrees in advanced courses in major courses in major establishments of further education (England/Wales); e) universities only.

Country codes

AU Austria (Empire without Hungary; the Republic of Austria)
BE Belgium
DA Denmark
DE Germany (after 1945 West Germany)
EW England and Wales
FI Finland
FR France
GB Great Britain
IR Ireland (after 1921 the Republic of Ireland)
IT Italy
NL The Netherlands
NO Norway
SC Scotland
SW Sweden
SZ Switzerland

Source: Reinhart Schneider, "Die Bildungsentwicklung in den westeuropäischen Staaten 1870 - 1975", Zeitschrift für Soziologie 11 (1982) no 3, p. 224.

Finnish higher education has its drawbacks, too. First, the number and proportion of annually graduated students is low, because studying for a degree in a Finnish university generally takes a longer time than in an average university in Western Europe. Second, post-graduate studies are poorly organised and the number of doctorial degrees has been relatively low compared to the number of lower degrees. Third, up to recent decades, Finnish institutions for higher studies educated primarily bureaucrats, teachers and priests but only sparingly scientists, engineers or business managers who would have been directly engaged in promoting economic growth. Among the university level students, the undergraduates of arts and law accounted for a high percentage, while there were relatively few students in the fields of economics, technology and science on their highest levels, even less than could have been expected, in view of the level of industrialisation in Finland.

Summary and Conclusions

The late industrialisation of Finland cannot be explained either by a low level of the overall ability to read or by the differences between male and female literacy rates. It is difficult to consider the Finnish case supporting the "threshold theory" of Bowman and Anderson according to which attaining the literacy rate of 30 - 40 per cent is coupled to a significant breakthrough in per capita income with a time-lag of one generation. In turn, applying the Sandbergian hypothesis about the longer lag of 120 - 130 years to the Finnish data is also problematic: Even if the statement "literacy (the ability to read) in

1850 is an amazingly good predictor of per capita income in the 1970s" may be otherwise valid but the relatively high Finnish literacy in 1750 did not prove to have been a good predictor of per capita income in the 1870s.[42]

A decisive fault of those mechanistic hypotheses is focusing too much on bare literacy rates and ignoring the contextual aspects of literacy and education. Finland, like Sweden, attained the literacy rate of 30 - 40 per cent by the mid-eighteenth century - i.e. over hundred years before their industrialisation and sustained economic growth started. As Egil Johansson states, "this contradicts the modern opinion that literacy is primarily (and solely) part of the so-called modernization process, where industrialization, urbanization, political participation, etc., make up the inevitable framework. To accept an early reading tradition in a preindustrial, agrarian, developing country like (18th and 19th century Finland and) Sweden is an important contribution towards

[42] In his article, Sandberg tries to sort out the peculiarities of the Finnish case calling it "the odd man out in the group" of poor, high literacy countries. However, all Scandinavian countries attained "the threshold literacy" by the mid-eighteenth century and they also needed much more than 120 - 130 years to establish a balance between their literacy rate and per capita income. According to the Nordic experience, which is probably an extraordinary case, we could speak about a time-lag of 200 - 230 years but that would mean launching a new hypothesis with a rigid lag which would again centre the main attention to statistical tinkering and would forget the cultural and socio-economic differences between various countries.

Recently Sandberg has stated that the hypothesis of the 120-year-lag is a misinterpretation of his article. Evidently his intention was only to say that a high overall literacy rate prevailing in certain countries in 1850 seems to have contributed to a long-run economic development which made possible such a comparatively high standard of living their inhabitants were enjoying in the 1970s. *Sandberg* (1982b), pp. 689-90.

dissolving some of the most difficult problems in this formula for Western modernization."[43]

The widespread ability to read and write is not a magic charm that ignites the Industrial Revolution in any societal circumstances. Literacy is a necessary condition for a successful industrialisation but it is not the sole or sufficient condition. In addition, literacy as a driving force of economic growth is significant only in a mature cultural and balanced socio-political context. It becomes a dynamic element of development if it is related to a modern educational system, the sufficient quality and quantity of the printed word and functional mass media as well as to social values coordinated with a modern, industrialised society. In eighteenth and early nineteenth century Finland, literacy was subordinated to religious indoctrination; Finnish-speakers hardly had any opportunity to use their literate skills for secular purposes. Publishing in that language was discouraged and restricted first by the Swedish government and then by the Russian regime.

The awakening national movement and political liberalism in the mid-nineteenth century opened up new opportunities for a widespread, functional literacy and mobilised a severely underused human capital for cultural, political and economic objectives. Nevertheless, the elementary schooling of children improved only sluggishly in the Grand Duchy, mainly because obligatory school attendance was introduced exceptionally late compared to that in Western Europe. The relatively slow development of primary education was counterbalanced by the rapid advances particularly in grammar school education and university studies. Indeed it was a fact that the shortage of various kinds of professionals and specialists

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[43] *Johansson* (1981), p. 182

was at its most acute at the time, but putting the emphasis of education on humanities did not sufficiently respond to the current economic and technological needs of the country. Despite this apparent discord, literacy, schooling and industrialisation advanced in some kind of interaction in modernising Finland; most of the educational reforms were connected to economic transformations, and economic development, in turn, drove benefit from the relatively high educational standards of the population. Education at home and abroad essentially promoted the transfer of modern technology and business methods into Finland. It also contributed to economic growth by increasing the social and occupational mobility of the labour force and by enhancing its flexibility and capacity to adopt new things. Good adaptability has been one of the most valuable assets of Finland during the past hundred years. In a way, education was the cause and economic growth the effect, because education in the wide sense efficiently modernised the thinking of the traditional peasant society.

During the past two centuries, Finnish education has had three main goals:

First, the Finns have seen education indispensable for their national strivings. For example, while contrasting the political strategy of the Finns toward the Russian Empire to that of the Poles, the national philosopher of the nineteenth century Johan Vilhelm Snellman (1806-1881) spelled out a thought which became an oft reiterated slogan in the second half of the past century: "Finland cannot win anything by violence, it can only be salvaged by the power of education".[44] The Finns aimed to use education for creating a high national culture, a united,

[44] *Castrén* (1935), p. 355.

self-assertive nation and later a politically independent state. Consequently, education became a national duty.

Second, in developing education, the tendency was directed towards educational democracy; i.e. the target has been that everybody should have equal opportunities for education irrespective of his/her sex, social status or wealth.

Third, education on a wide scale was considered a useful instrument for promoting economic growth and social welfare.

While time passed, the main emphasis in the goal-setting gradually glided from nation-building to boosting economic growth. By means of great investments in education, Finland aspired to catch up with Western Europe - the Scandinavian countries especially - and in various aspects it has now attained this objective. Although in the nation building a great deal of educational resources was less well directed and sometimes even wasted, much was gained by an enthusiasm to learn, teach and educate. One could hardly deny that modern, industrialised Finland was to a large extent shaped by target-oriented education.

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ELINKEINOELÄMÄN TUTKIMUSLAITOS (ETLA)
THE RESEARCH INSTITUTE OF THE FINNISH ECONOMY
LÖNNROTINKATU 4 B, SF-00120 HELSINKI

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