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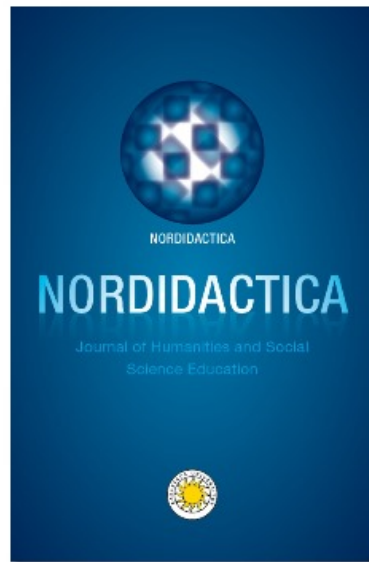
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Shadows under the North Star- The inequality developing in Finnish school education

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Abstract: In Finland, the National Core Curriculum for Basic Education is supposed to ensure equal opportunity for enrollment to upper secondary education by defining the learning objectives for each school subject at the end of basic education. The first nine years of education in Finland are described locally as 'basic education'. Having equal learning opportunity as the leading ideal of educational equity implies that no statistically significant differences should prevail between groups, such as genders or regions. This study sets out to map the fulfilment of equality via two research questions: How do learning outcomes at the end of basic education vary across certain background variables in three school subjects, and what is the size of between-school-variation in learning outcomes of students at Finnish- and Swedish-language of instruction schools. The results show that educational equality is not uniform across school subjects and schools. Learning outcomes in social studies, mathematics and English (advanced syllabus) vary according to gender, parents' educational level and the language of instruction. However, the between-school variation, although small in general, differs only slightly between Finnish- and Swedish-language of instruction schools.

KEYWORDS: EDUCATIONAL EQUALITY, EQUAL OPPORTUNITY, BASIC EDUCATION, ASSESSMENT, LEARNING OUTCOMES

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Introduction

Education has always been appreciated in Finland. At its best, it has secured good rates of employment, a steadily progressing work career and, especially in the case of higher education graduates, good economic returns. The basic right to education and culture is recorded in the Finnish Constitution 731/1999 in Section 16 - Educational rights, and Section 17 determines the role of Finnish and Swedish as the official languages in Finland.¹ Bilingualism means in practice that Finnish and Swedish function as languages of instruction and approximately 5% of the population are Swedish speakers.² The Swedish speaking population is particularly present along the western and southern coasts.

Over the 40 years of its existence, the Finnish comprehensive school has been characterized as providing free, uniform education for everyone, in a safe neighbourhood school irrespective of pupils' background. Comprehensive schools do not select their pupils, the school network is regionally extensive, and there are no gender-specific school services. Nowadays public authorities must also ensure equal opportunity for all residents in Finland to gain access to education after basic education schooling and to develop themselves, irrespective of their financial standing. There is also no streaming within schools, and there is no standardized national test at the end of the first nine years of education in Finland described locally basic education. There are neither an inspectorate. (Ouakrim-Soivio, 2016, pp. 133-134.)

Because there are no national high-stake tests at the end of basic education, a National Core Curriculum for Basic Education (NCC) with subject specific objectives, contents, and criteria for a good performance, has an important role to play. The NCC serves as a norm and a tool for nationwide guidance in teaching, learning and assessment. Therefore, learning objectives along with the numerical grade to be given for mastery in each school subject at the final phase of basic education are defined in this document. It should be noted that the grading criteria are provided only for grade 8 (good competence), which is to serve as a baseline on the grade scale from 4 (lowest) to 10 (highest). While serving as a guideline for schools and teachers, the landmark of grade 8 should ensure that there is objective evaluation of all pupils in Finland. The national comparability of final grades in every subject is crucial in minimising inequality, as pupils apply for and are selected into upper secondary education mainly based on their school grades at the end of basic education. From the point of view of equal educational opportunity it is imperative that grades obtained in different subjects at the end of compulsory education are nationally comparable, since they largely

¹ The English version of Finnish Constitution can be found at: <http://www.finlex.fi/en/laki/kaannokset/1999/en19990731.pdf>

² See Statistics of Finland: http://www.stat.fi/til/vaerak/2016/01/vaerak_2016_01_2017-09-22_kuv_001_fi.html

determine the subsequent steps in the pupil's educational path. (Harju-Luukkainen et al., 2016, pp. 6-7.)

To find out if the objectives set for teaching and the consistency of final grades given by teachers were being attained, a system of evaluation of learning outcomes was created at the end of the 1990s. The system to measure how well the aims of NCC have been met is monitored by the Ministry of Education, which commissions the Finnish Education Evaluation Centre (FINEEC) to carry out regular assessments of school subjects. These sample-based assessments at the end of basic education are designed to map and measure knowledge, skills and attitudes within the pupil population. The nationally representative samples cover approximately 10% of the population of school and pupils in the final year of basic education (Jakku-Sihvonen, 2013).

The assessment of learning outcomes provides valuable information for the highest educational authorities on how well the objective of equal educational opportunity in basic education is achieved. Therefore, learning outcomes are investigated from several perspectives, for example, pupils' gender, language of instruction, and parents' level of education. (Harju-Luukkainen et al., 2016.) The assessment of learning outcomes is reported nationally by school subject. The discrepancies between the grades given to pupils in different schools and the competence they showed in assessment of learning outcomes are found *inter alia* in history, social studies, mathematics, health education, English (advanced syllabus) and Swedish (intermediate syllabus) (Hildén et al., 2016). According to the subject-specific results of learning outcomes, there are differences in learning outcomes between gender in Finnish as a mother tongue (Harjunen & Rautopuro, 2015), between parents' educational background in history, social sciences (Ouakrim-Soivio & Kuusela, 2012) and mathematics (Julin & Rautopuro, 2016) and between language of instructions in English as advanced syllabus (Tuokko, 2000). Only in mathematics there are longitudinal data available (see Julin & Rautopuro, 2016; Metsämuuronen et al., 2017). In practice this means that there have been few studies in which the national learning outcomes of several school subjects have been studied concurrently by gender, language of school instruction or parents' education (see Harju-Luukkainen et al., 2016).

To get a better picture of the educational equality and its implementation, for this article we studied the learning outcomes of three school subjects, social studies, mathematics and English (advanced syllabus). These subjects were chosen because they are important academically but also in defining young peoples' future life in the work force. Hence this study examines the perspective of equal opportunity through basic education and whether it is of benefit when students are applying for entry to upper secondary education.

Equal opportunity in Education

Equality has been declared as a core value in the Scandinavian welfare states, where welfarism is characterized by a public service ethos, a commitment to professional standards and values such as equity, care, and social justice (Biesta, 2004, p. 236; Antikainen, 2006, p. 229). However, the definitions of the construct of equality vary in

accordance with how and when it was introduced into local educational policies. In the research of educational policy, the concept of equality has traditionally been approached through the restrictive definition of equal opportunity, in which equality is described as a norm or in written rights. The broader definition of equality is closer to the idea of fairness or equity. This definition is called actual or de facto equity (Laiho, 2013, p. 28; also see Holli, 2002, p. 17; Holli, 2012, p. 78). In practice, actual equality is manifested by the opportunity offered to people with different backgrounds so that they can achieve the same results in education (for instance). According to Kathleen Lynch and John Baker (2004, p. 134) equality in education has generally been viewed as a matter of dividing educational and education-related resources more equally or fairly.

Apart from its content, the definition of equality also depends on the point of time at which the issue was introduced to policy makers (Laiho, 2013, p. 28; Kantola et al., 2012, p. 9). In the 1960s, equality in education was regarded from the point of view of educational opportunity i.e. for the achievement of social justice regardless socio-economical background. Pierre Bourdieu's and Jean-Claude Passeron's *Cultural Capital Theory* (1964, 1970) and John Coleman's report (1966) were studies that influenced the conversation about equality and educational opportunity.

In their study, Bourdieu and Passeron focused on inequalities in schooling. Their explanation of educational inequalities relies on two core assumptions. Firstly, social classes preserve a strong cultural identity, so that the position in the occupational hierarchy is closely related to the position in the cultural hierarchy. Secondly, social origins have a strong influence on students' cultural resources, given that children of the same class are exposed to broadly similar socialization influences and share common conditions of existence. Cultural capital is considered to be the main determinant of school success. (Bourdieu & Passeron, 1990, p. 30; pp. 42-43; pp. 56-57). Students' performance is not evaluated according to (class) neutral standards, because the pedagogical practices and assessment procedures are related to the culture of the upper class (Barone, 2006, p. 1040). Cultural resources and learning outcomes is a core subject of Bourdieu's thought and it probably still represents the most debated part of his work (see e.g. Rancière, 1999, 2004).

In the 1960s and 1970s, Sweden was a model social-democratic service society that stressed equality. The reform of uniform basic education system took place in all Nordic countries at that time, albeit with slightly different emphases. Swedish educator, researcher and policy maker Torsten Husén was the one whose vision of a learning society was a good representation of an attempt to conceptualise a Nordic model of an education system that has been adapted to an international environment (Antikainen, 2006, p. 230).

Husén (1974) introduced three approaches to educational equality: conservative, liberal, and radical. The conservative approach underlines the inevitability of social differences, but also states that the most vulnerable individuals must not unduly suffer from those differences. The liberal perception emphasises the equality of educational opportunity, and the radical perception voices the equality of learning outcomes (Husén, 1974; Malin, 2005, p. 17). The concept of equal opportunity can further be defined either extensively or broadly. The extensive approach stresses that the structural barriers

to participation in education should not exist or at least they should be removed. Those barriers could include resources, structures and / or contents (see Pelletier, 2009; Masschelein & Simons, 2010). If equal opportunity in education is seen restrictively, the focus of the study is on how equal the learning outcomes are. When equal opportunity is defined in this way, differences between individuals are acceptable and natural, but systematic differences between the groups are not (Jakku-Sihvonen & Kuusela, 2002, p. 7).

Having educational opportunity for the achievement of social justice regardless of socio-economical background is close to Husén's liberal approach to educational equality. According to the broader definition, there should not be structural barriers for the educational participation. At that time, the concept of equal opportunity also came to include equitable resources of implementation, i.e. time and money invested in learning, structures such as basic education, and the nationally-defined curriculum contents.

From the 1970s on, equal opportunity was defined narrowly from the point of view of equal learning outcomes, through which the pupils were able to acquire knowledge and skills that were as equal as possible. The stipulation of equal learning outcomes is near Husén's radical approach to educational equality. The ethos behind equal learning outcomes was pedagogical optimism based on the idea that every pupil has the capacity to achieve the same learning outcomes but at different pace (Ahonen, 2003). However, there is no plausible egalitarian theory that says that the outcomes of all social processes should be the same for everyone. Equality of condition is about equalizing what might be called people's 'real options' (Lynch & Baker, 2004, p.132).

According to Fishkin (1983), equality of opportunity has been based on tensions between the principle of merit, which assumes procedural fairness in the evaluation of individual qualifications for positions, and equality of life chances, which states that background characteristics should not predict future positions. The broader definition of equal opportunity also rejects systematic, background-related differences between groups. From the point of view of actual equality of opportunity and its implementation, it is essential to survey whether the pupils have acquired the same educational knowledge and skills regardless of pupils' gender, residency or family background (Jakku-Sihvonen, 2013, pp. 17–18).

Background variables such as gender, language of instruction of schools and indicators of parents' level of education, are most frequently addressed by the broader definition of equal opportunity to scrutinize structural inequalities in education. This definition reminds us about Husén's conservative approach to educational equality. Subsequently, they have ended up as background variables in virtually all evaluations of learning outcomes (Jakku-Sihvonen & Kuusela, 2002, p. 7).

Since the beginning of the 21st century, a major principle for guiding Finnish educational policy and the school system has been equal opportunity for all learners. Therefore, the function of basic education is to ensure the materialization of the ideal for all children and young people regardless of their school, background, or circumstances (Ahonen, 2003; Malin, 2005). In practice, equality in education means equal access to education and removal of obstacles to learning, especially among pupils

from disadvantaged backgrounds. Alongside comparisons between individual pupils and groups of pupils, a vital aspect of equitable distribution of educational outcomes is manifested by differences between schools (Malin, 2005, pp. 16-17). The proportion of systematic between-school variation due to different "sources" is hence an indicator of the fulfilment of the principle of equity in basic education (Malin, 2005, p. 24).

Research questions

The aim of this paper was to find out whether equality of opportunity is realized, and whether pupils are treated equally at the end of basic education. The data draw on evaluations of learning outcomes in three school subjects, namely social studies, mathematics and English language (advanced syllabus). Mathematics and English are used as control subjects from the point of view of convergent validity i.e. whether the results obtained in social studies are also consistent with the results in mathematics and in English. The research questions answered in this paper are:

1. What is the association between learning outcomes and certain background variables (i.e. gender, parents' educational level and the language of instruction) in social studies, mathematics and English (advanced syllabus)?
2. What is the size of school differences (between-school variation) in learning outcomes of Finnish- and Swedish-language of instruction schools with regard to gender and parents' educational level, and what factors explain these differences?

Data and method

The aim of this paper was to find out whether equality of opportunity is realized, and whether pupils are treated equally at the end of basic education. The data draw on evaluations of learning outcomes in three school subjects, namely social studies, mathematics and English language (advanced syllabus). The research questions answered in this paper are:

Our data consist of the assessments of learning outcomes in social studies (2012; n = 4,726), mathematics (2015; n = 4,779) and English (advanced syllabus 2014; n = 3,476) in Finland at the end of basic education (9th grade). The data were collected by using two-stage stratified random sampling. The first stage incorporated a sample of schools. The schools were regionally stratified before the sampling. In the second stage, a random sample of pupils was selected from within the sampled schools. The samples reflect the structure of the population and are representative of Finnish pupils and their schools (Table 1).

TABLE 1

The structure of samples in social studies and English (advanced syllabus).

		Mathematics	Social studies	English
Number of schools (pupils)	Finnish speaking	124 (4,779)	98 (4,134)	94 (2,966)
	Swedish speaking	16 (492)	15 (592)	15 (510)
Gender*	Girls	2,327 (48.7 %)	2,370 (50.2 %)	1,697 (49.0 %)
	Boys	2,446 (51.3 %)	2,352 (49.8 %)	1,766 (51.0 %)

* Means that all respondents did not answer to the questions that concerned their gender. The number of findings does not match with the original size of sample.

The key objectives and knowledge that were addressed as learning outcomes in social studies, were critical interpretation of information, statistics and graphs conveyed by the media, justification of social issues, several alternatives of social decision-making and economic solutions and their consequences and ethical questions of both social and economic activities (Ouakrim-Soivio & Kuusela, 2012, p. 12). The learning objectives and content areas defined in the NCC guide the assessment of learning outcomes. In mathematics, the tasks in the assessment comprised five content areas: algebra, functions, geometry, numbers and calculations, and probability and statistics (Julin & Rautopuro, 2016, p. 38). In this study, the pupils' solution percentages of final total scores of content areas were used as measures of the learning outcomes in mathematics and social studies.

In foreign languages, the target level for each linguistic sub-skill was defined using a nationally adapted and validated application of the six-level-proficiency scale in the Common European Framework of reference for languages (CEFR, 2001; Hildén & Takala, 2007). The performances in speaking and writing were rated directly to nine levels defined in the curriculum. However, the tasks of receptive skills underwent a standard-setting procedure to turn the scores into proficiency levels applying the so-called Bookmark method (Cizek, 2007; Cizek & Bunch, 2011; Härmälä, Huhtanen & Puukko, 2014).

In all the subjects studied here, a large set of items was field tested before the main study. To examine the difficulty level of the proposed items, an item response analysis (IRT) was run. In the assessments of social studies and English, a one-parameter Rasch model was used, whereas in mathematics assessment, a two-parameter Birnbaum model was utilized (Emberson & Reise, 2000, pp. 67-70; pp. 83-84). The final selection of test tasks was made by the project teams and the item writers based on the IRT analyses. In English, teacher and pupil feedback was also utilized (Härmälä, Huhtanen & Puukko, 2014).

The data were analysed by using a range of well-established quantitative methods. In addition to usual descriptive statistics (e.g. frequency distributions and measures of central tendency and variation), more sophisticated methods were applied. Due to the multistage sampling and therefore hierarchical structure of the data, multilevel analysis was used when analysing group differences and when modelling the effects of

background variables on learning outcomes. A mixed methods model, also known as random coefficient or hierarchical linear model, was applied (Hox, 2002, pp. 11-15).

Results

The results of this paper will be presented in the same order as the research questions were put. The results of social studies are reported first, followed by mathematics and English (advanced syllabus). Firstly, the group-wise variation of learning outcomes in the three subjects was investigated across the selected background variables representing various angles of equity (gender, parents' educational level and language of instruction). This analysis provides an answer to the first research question. Secondly, the results focus on variation between schools is mandated by the second research question.

Between-group differences by gender and language of instruction

Social studies and mathematics

In social studies and mathematics, the solution percentages were used to indicate the relative achievement rates, while an absolute proficiency scale was available in the English advanced syllabus. The results for the first research question and at the same time, the distributions of learning outcomes (solution percentages) in social studies and mathematics are presented in Figure 1. In social studies, the mean solution percentage was 63.9 (MD = 65.2, SD = 13.6). Respectively, the percentage in mathematics was 43.1 (MD = 42.6, SD = 20.1). However, the solution percentages were not comparable between subjects. The tests were neither standardized nor equated.

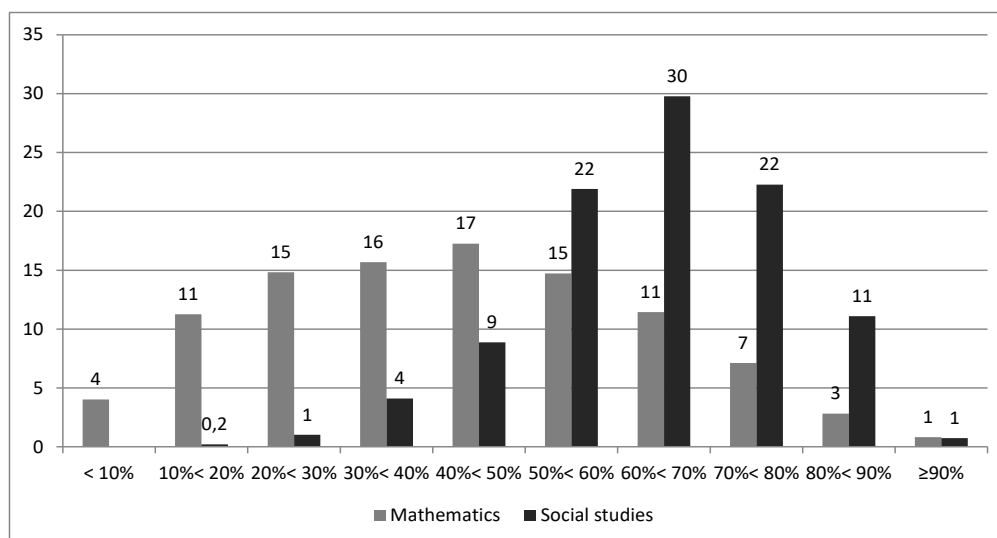


FIGURE 1

The distribution of learning outcomes in mathematics and social studies.

As depicted in figure 1, the shapes of distributions were rather different. Even if the percentages as such were not comparable, the distribution of mathematics outcomes was Gaussian, whereas the distribution of outcomes in social studies was skewed to the left. In social studies, low achievers were almost entirely missing, whereas the proportion of high percentage achievers was prominent. In mathematics, the proportion of low achievers was relatively high and the proportion of top achievers was low. This result parallels to the PISA results in 2015 (Vettenranta et al., 2016).

In social studies, girls slightly out-performed boys by a mean solution percentage that was 3%-units above boys'. Almost one boy out of five (17.8 %) performed below 50%. Only 11% of girls had a solution percentage below 50%. Both differences were statistically significant ($p < .001$). In mathematics, there were no statistically significant differences in learning outcomes between genders or between schools at which instruction was in Finnish rather than in Swedish. The achievements of pupils in Finnish-language schools were on average 8%-units higher when compared with pupils in Swedish-language of instruction schools. In Swedish-language of instruction schools, more than one out of five (22.6%) pupils did not reach the 50% solution percentage. In Finnish instruction schools, the corresponding share was 13%. The differences were statistically significant ($p < .001$).

English (advanced syllabus)

The results for achieving the target level for subskills in English language are illustrated in Figure 2.

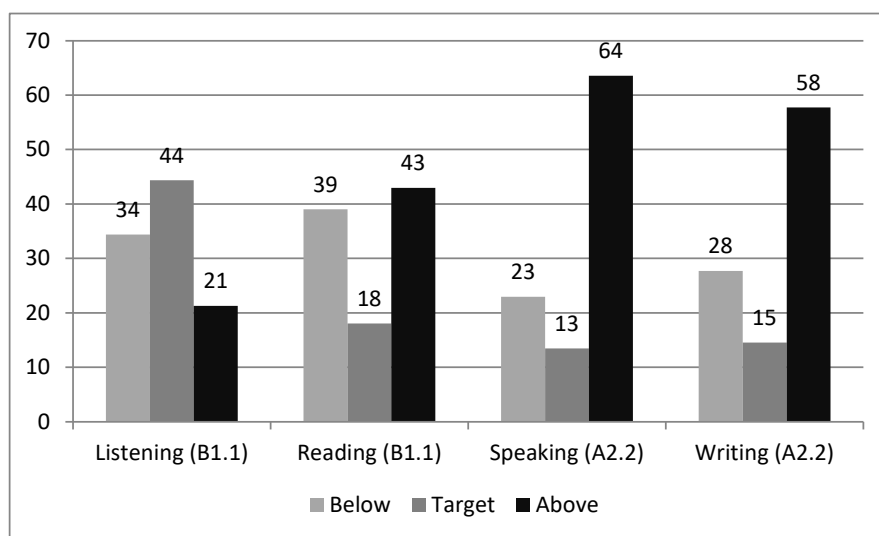


FIGURE 2

The results of English language (advanced syllabus) by subskill.

As evidenced in figure 2, pupils' achievements in productive skills (speaking and writing) were defined as excellent, as a clear majority of pupils surpassed the target level and only about one pupil out of four did not reach that level. In receptive skills

(listening and reading), the results on average were more modest. Some statistically significant differences ($p < .05$) between boys and girls were detected in receptive skills, favouring the boys. In productive skills, no statistically significant differences were found. With regard to the language of instruction, Swedish-language of instruction schools outperformed Finnish-language of instruction schools (Figure 3) in all subskills of advanced syllabus English, and the difference between languages of instruction was statistically significant ($p < .001$).

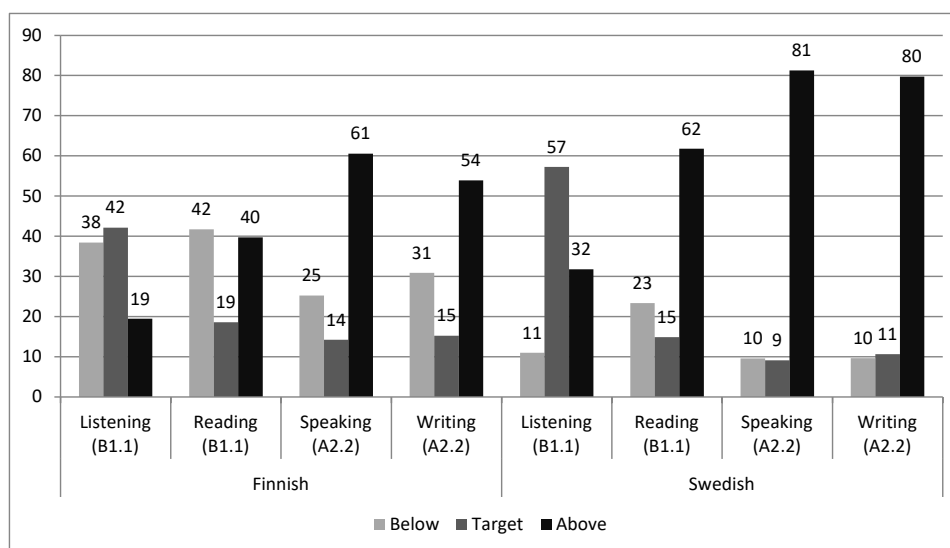


FIGURE 3

Achievement of target levels at Finnish- and Swedish-language of instruction schools.

Furthermore, a range of gender differences within Finnish- and Swedish-language of instruction schools were discovered. In Finnish instruction schools, boys surpassed the target level in listening more often than girls (22% vs. 17%). The same was true for reading (43% vs. 36%). Both differences were statistically significant ($p < .05$). In productive skills, these differences were not present. In Swedish-language of instruction schools, no gender differences were found in listening and reading. However, in productive skills, girls surpassed the target level more often than boys: in speaking (85% vs. 78%) and in writing (83% vs. 77%). In speaking, the difference was statistically significant ($p < .05$) and in writing, close to that ($p = .09$).

Group-wise effects of parents' educational background and language of instruction

The association between pupils' learning outcomes and parents' educational background was obvious in all three subjects. In assessments of learning outcomes, parents' educational background was operationalized by asking whether the mother, father (or both) had completed the matriculation examination. The matriculation

examination is taken at the end of secondary education to qualify for entry into university.

TABLE 2.

Effect of parents' educational background on learning outcomes by gender and language of instruction in social studies and mathematics.

	Mathematics				Social studies			
	Finnish		Swedish		Finnish		Swedish	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Constant	36.2	36.2	39.6	36.5	59.6	63.1	50.9	56.7
	($p < .001$)	($p < .001$)	($p < .001$)	($p < .001$)	($p < .001$)	($p < .001$)	($p < .001$)	($p < .001$)
Fixed parameter: parents' education (matriculation examination completed)								
None (ref.)	Coefficient (p-value)							
One	6.6	7.0	1,8	9.0	4.3	4.8	6.0	1.2
	($p < .001$)	($p < .001$)	N.S.	($p < .01$)	($p < .001$)	($p < .001$)	($p < .01$)	N.S.
Both	13,9*	13,1*	4,8	13,4	8,0*	7,7*	10,9	5,9
	($p < .001$)	($p < .001$)	N.S.	($p < .001$)	($p < .001$)	($p < .001$)	($p < .001$)	($p < .001$)

*Difference between one parent matriculated and both parents matriculated statistically significant.

Table 2 shows that in social studies, average achievements were 4%-units higher, if one of the parents had completed the matriculation examination compared to pupils whose parents had not completed that examination, and 8%-units higher if both parents had completed the examination. These differences were statistically very significant ($p < .001$). These results above apply to Finnish-language schools. In Swedish-language schools, boys' average achievements were 6%-units higher if one of the parents had completed the matriculation examination, compared to pupils whose parents had not completed that examination, and 11%-units higher if both parents had completed the examination. Instead, girls' achievement were 1%-units lower if one of the parents had completed the matriculation examination compared to pupils whose parents had not completed that examination, and 6%-units lower if both parents had completed the examination. The differences in Swedish-language of instruction schools were statistically significant ($.01 < p < .001$) except between girls' whose parent had matriculated compared those whose parents had not matriculated.

In mathematics, those pupils whose mother or father had completed the matriculation examination performed on average 7%- units better than pupils whose parents had not completed it. If both parents had completed the matriculation examination, the difference was 13%-units on average. The effect was about the same for boys and girls. These differences were statistically significant ($p < .001$). Moreover, there was a statistically significant difference between pupils' scores, if one of their parents had completed the matriculation examination or if both of them had. In schools with Finnish as the language of instruction, the differences were the same. In Swedish-language schools, the effect was somewhat smaller (5%-units; 9%-units), but still statistically significant compared to pupils whose parents had not completed matriculation examination. The difference between pupils for whom one parent had matriculated and both had matriculated was not statistically significant.

From table 2 can be seen that in social studies and in mathematics, there were more positive coefficients among girls than boys to parents' education level, regardless the language of school instruction. The only exception was social studies, in which boys from Swedish-language of instruction schools deviated from all the other groups. The difference between boys and girls in Swedish-language of instruction schools was almost 5%-units for the benefit of boys. Regardless of gender or the language of the school instruction, the positive coefficients in social studies and in mathematics were approximately twice as large if both parents had passed the matriculation examination compared with those with only one matriculated parent. In general, the coefficients for girls were higher if one of the parents had matriculated, except in social sciences in Swedish-language speaking schools where the situation was the opposite. If both parents had matriculated, the effect was not as straight-forward. In Finnish-language speaking schools, the difference in learning outcomes between pupils of whom both parents had matriculated was statistically significant compared with pupils with one matriculated parent. In Swedish-language speaking schools this difference was not detected.

The effects of parents' educational background on learning outcomes in listening and reading by language of instruction and gender are presented in Table 3. Again, all the significant differences between cases in which one parent had matriculated and both parents had matriculated were found in Finnish-language schools. In listening, boys were more exposed to the variation in parents' education than girls. In reading, parents' level of education was echoed in the performance of both genders.

TABLE 3

Effect of parents' educational background on learning outcomes by gender and language of instruction in English (advanced syllabus) listening and reading a) The rating scale ranged from A1.1 and below to B2.1 and above. The exact stages below A1.1 and above B2.1 are not defined. A1.1 and B2.1, before A2.1 and B1.1.

	Listening				Reading			
	Finnish		Swedish		Finnish		Swedish	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Constant	2.48	2.35	3.00	2.90	2.55	2.50	2.86	2.86
	($p < .001$)	($p < .001$)	($p < .001$)	($p < .001$)	($p < .001$)	($p < .001$)	($p < .001$)	($p < .001$)
Fixed parameter: parents' education (matriculation examination completed)								
None (ref.)	Coefficient (p-value)							
One	.27	.34	.24	.36	.31	.32	.45	.58
	($p < .001$)	($p < .001$)	($p < .05$)	($p < .01$)	($p < .001$)	($p < .001$)	($p < .05$)	($p < .001$)
Both	.62*	.59	.36	.43	.71*	.69*	.55	.57
	($p < .001$)	($p < .001$)	($p < .05$)	($p < .01$)	($p < .001$)	($p < .001$)	($p < .01$)	($p < .01$)

*Difference between one parent matriculated and both parents matriculated statistically significant.

Advanced syllabus English, both listening and reading skills, improved in line with parents' completion of the matriculation examination. Pupils with one matriculated parent performed on average .24 - .58 proficiency levels better compared with pupils with neither parent having completed the matriculation examination. If both parents had matriculated, pupils' performance was .36 - .71 proficiency levels higher in comparison with children of non-matriculated parents. Both differences were statistically significant ($p < .001$). The difference was about the same for boys and girls and in schools with Finnish as the language of instruction. As in the other subjects investigated for this paper, the effect was smaller in schools with Swedish as the language of instruction, and the difference between pupils with one parent or both matriculated was not significant.

TABLE 4

Effect of parents' educational background on learning outcomes by gender and language of instruction in English (advanced syllabus) speaking and writing.

	Speaking				Writing			
	Finnish		Swedish		Finnish		Swedish	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Constant	5.10	5.20	6.31	6.56	4.87	4.96	6.04	6.20
	($p < .001$)	($p < .001$)	($p < .001$)	($p < .001$)	($p < .001$)	($p < .001$)	($p < .001$)	($p < .001$)
Fixed parameter: parents' education (matriculation examination completed)								
None (ref.)	Coefficient (p-value)							
One	.68	.94	.07	.55	.81	.78	.28	.76
	($p < .001$)	($p < .001$)	N.S.	($p < .05$)	($p < .001$)	($p < .001$)	N.S.	($p < .001$)
Both	1.15	1.25	.66	.72	1.38*	1.40*	.78	.85
	($p < .001$)	($p < .001$)	N.S.	($p < .05$)	($p < .001$)	($p < .001$)	($p < .01$)	($p < .01$)

* Difference between one parent matriculated and both parents matriculated statistically significant.

In speaking and writing (Table 4.), the effects of parents' education were slightly stronger and the differences statistically significant ($.001 < p < .05$). They were about the same size in speaking and writing among boys and girls and in schools with Finnish as the language of instruction. However, in writing, the effect was slightly stronger among girls and in schools with Swedish as the language of instruction.

The effect of parents' educational background on learning outcomes in speaking and writing by the language of instruction and gender are presented in Table 4. In Finnish-language of instruction schools, the difference between having one matriculated parent and both parents was statistically significant for both genders in writing, while no significant difference was detected in the speaking skill.

School differences in Finland

The second research question addressed differences between learning contexts. Many studies to date have shown that inter-school differences in Finland are lower than in other countries (Vettenranta et al., 2016, p. 57). In practice, these findings imply that only a very small proportion of the variation in pupils' learning outcomes can be explained by school differences. The intra-class-correlations (ICC) measuring school differences are presented in Table 5. The total ICC = .07 in mathematics, for example, means that 7% of variation in learning outcomes can be explained by school differences.

TABLE 5

Intraclass-correlations (ICC) by subject and language of instruction.

	English (advanced syllabus)				Mathematics	Social studies
	Listening	Reading	Speaking	Writing		
Finnish	.08	.08	.19	.08	.07	.17
Swedish	.13	.08	.33	.10	.06	.10
Total	.12	.10	.24	.12	.07	.19

As we can see from table 5, ICC differed tangibly between school subjects, as well as between Finnish- and Swedish-language of instruction schools. In general, the school differences were relatively small, but notably higher in social studies and in English reading. In Swedish-language of instruction schools, as much as 33% of the variation in English speaking achievement derived from school differences. The effects of parents' educational background on school differences are presented in table 6. Variance components in the null model (random intercept model) are the ones that were used to calculate the intra-class-correlations presented in Table 5. Model 1 is a model with parents' educational level as a fixed effect.

As illustrated in table 6, parents' educational background was a stronger predictor of between-school variation than of within-school variation. In general, parents' educational background predicted 28% - 38% of the between-school variation, except in social studies. However, the result was not too dramatic because of the small differences between schools.

TABLE 6

Parents' educational background as predictor of school variation in the subjects investigated

		Variance component			ICC
		Between schools	Within schools	Total	
English	Null model	.12	.87	.99	.12
(listening)	Model 1	.08	.83	.91	.09
	Variance explained (%)	33.3	4.6		
English	Null model	.14	1.33	1.47	.10
(reading)	Model 1	.10	1.24	2.20	.07
	Variance explained (%)	28.6	6.8		
English	Null model	.89	2.91	3.80	.24
(Speaking)	Model 1	.64	2.69		.19
	Variance explained (%)	28.1	7.6		
English	Null model	.48	3.56	4.4	.12
(Writing)	Model 1	.30	3.27		.08
	Variance explained (%)	37.5	8.1		
Mathematics	Null model	28.0	374.5	402.5	.07
	Model 1	19.6	353.8	373.4	.05
	Variance explained (%)	30.0	5.5		
Social studies	Null model	36.0	153.6	189.6	.19
	Model 1	34.5	143.9	178.4	.19
	Variance explained (%)	4.2	6.3		

Summary

The results of learning outcomes in social studies, mathematics and English (advanced syllabus) reveal certain group-related discrepancies in student achievement. In social studies, girls slightly out-performed boys and pupils from the Finnish-language of instruction schools performed better than Swedish-language of instruction schools. In mathematics, no differences were detected in learning outcomes between genders or between Finnish-language of instruction and Swedish-language of instruction schools.

In English (advanced syllabus) there were some statistically significant differences ($p < .05$) between boys and girls in receptive skills in favour of boys, and Swedish-language of instruction schools outperformed Finnish-language of instruction schools.

The association between pupils' learning outcomes and parents' educational background was obvious. In the school subjects examined for this paper, the difference between pupils with one matriculated parent or both matriculated parents was statistically significant. In social studies, pupils whose parents had completed that examination scored 8%-units higher. In mathematics, if both parents had completed the matriculation examination, the difference was 13%-units, on average.

In both social studies and mathematics, the differences were similar between boys and girls and in schools with Finnish as the language of instruction and the size of the effect was smaller between students in Swedish-language of instruction schools in both subjects. However, the differences were not statistically significant. In English (advanced syllabus), in both listening and reading, if both parents had matriculated, pupils' performance was higher in comparison with children of non-matriculated parents. Both differences were statistically significant ($p < .001$). The difference was about the same between boys and girls and in schools with Finnish as the language of instruction. As in the other subjects investigated for this paper, the effect was smaller in schools with Swedish as the language of instruction, and the difference between pupils with one parent or both matriculated was not significant. In speaking and writing, if both parents had matriculated, the differences were about the same size in speaking and writing between boys and girls and in schools with Finnish as the language of instruction and the differences were statistically significant ($p < .001$). However, in writing the effect was slightly stronger among girls and in schools with Swedish as the language of instruction.

In general, the school differences were relatively small, but notably higher in social studies and in English reading. In Swedish-language of instruction schools, as much as 33% of the variation in speaking achievement derived from school differences. As shown earlier in this paper, parents' educational background predicted 28% - 38% of the between-school variation, except in social studies. Beyond the scope of this paper, a few recent developments seem to have evened out certain inequities: in mathematics, the long-established head-start experienced by boys over girls is diminishing. Moreover, results at Swedish language of instruction schools are improving, and the comparison across national languages as languages of instruction has turned less disadvantageous for Swedish.

Conclusions

Even though equal opportunity for education is stated in the normative documents, it does not necessarily mean that the ideal is achieved in the everyday life of the Finnish schooling system. According to the results of the present study, the reality does not fully match the principle of educational equality according to Husén's definition of conservative, liberal and radical approaches and/or the broader or narrower definition of educational equity. If educational equality and its realization are assessed through the broad definition or liberal and conservative approach to educational equality entailing removal of structural obstacles to equal opportunity in and for education, the results of this paper indicate certain structural barriers that affect and bias pupils' access to upper secondary education.

On the other hand, we might choose to approach equality from the narrow definition, a perspective limited to learning outcomes. The results of our study are less encouraging in both cases. The effect of gender and parents' education on learning outcomes in social studies, mathematics and English (advanced syllabus) is considerable but slightly different in Finnish-language of instruction schools compared with Swedish-language of instruction schools.

Since 1998, the evaluation system for learning outcomes has systematically addressed an established set of variables connected to educational equity. According to studies from the beginning of the 2010s, evaluation studies in several subjects have shown that educational equity is less established than anticipated by policy makers and educational administrators (Ouakrim-Soivio, 2013; Hildén et al., 2016).

Even though the school differences were small, they affect thousands of young people in Finland. Today, 12%-15% of pupils entering basic education are from a low socio-economic background. This means in practice that per age group of 57,000, there are around 8,000 pupils whose prerequisites for schooling are less than optimal. The number of low socio-economic background students has tripled during the past 15 years. Furthermore, poverty and other unfavourable circumstances seem to have a more serious impact on boys' learning outcomes (Karvonen & Salmi, 2016, pp. 13-14).

If these inequalities are allowed to persist and grow, the Finnish school system and its core values, educational opportunity for all regardless pupils' background, might be compromised. The latest PISA results show also that for the first time in recent decades, the association between parents' socio-economic background and pupils' learning outcomes in Finland is above the OECD average (Vettenranta et al., 2016). These examples above remind that basic education as a basic service for all residents of Finland obliges schools to work for social responsibility. The differences between schools which are based on the educational background of parents are likely to lead to a democratic deficit in the Finnish society of the future. As stated by scholars, group-level differences across social and in learning outcomes jeopardize equality.

A similar trend as in Finland can also be seen in other Nordic countries in latest OECD Pisa results. They reveal growing differences between socio-economically disadvantaged pupils and pupils from more advantageous backgrounds. In addition, the Pisa results continue to show a large gender gap in reading, where girls are significantly

better than boys. In all Nordic countries citizens appreciate and trust the public schooling system. If the variation within each Nordic country or between them increases radically, it will undermine confidence not only to public schools but also the whole Nordic welfare state system that relies on actors that produce educational services of its citizens and for the society at large (Ludvigsen et al 2016).

Findings from this study provide the undesirable evidence of problems in implementing educational equality in the Finnish school system. In practice, this also means that the key principle whereby attempts to maintain educational equality in basic education has been arranged via neighbourhood schools could be questioned. Parents' educational background can already be seen in bigger cities where residential areas are becoming differentiated and through this, the schools reflect parents' socio-economic background. It seems that especially in the metropolitan areas, schools seem to be differentiated, with well-educated parents avoiding placement of their children in the nearest school (Berisha & Seppänen, 2016). Finnish basic education now offers more individual opportunity and choices than before to pupils and their parents inside the system. It also seems that the interpretation of educational equality has become more diverse than before. Instead of asking if there are inequalities in Finnish basic education, we ought to ask how much inequality is being generated by basic education.

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