



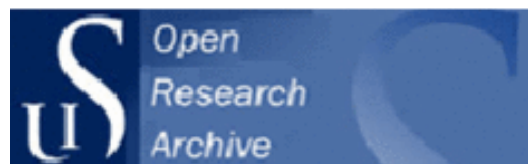
University of
Stavanger

Lundetræ, K. (2011) Does parental educational level predict drop-out from upper secondary school for 16- to 24-year-olds when basic skills are accounted for? A cross country comparison.
Scandinavian Journal of Educational Research, 55(6), pp. 625-637

Link to published article:

DOI: [10.1080/00313831.2011.555925](https://doi.org/10.1080/00313831.2011.555925)

(Access to content may be restricted)



UiS Brage

<http://brage.bibsys.no/uis/>

This version is made available in accordance with publisher policies. It is the author's last version of the article after peer-review, usually referred to as post-print. Please cite only the published version using the reference above.



Does parental educational level predict drop-out from upper secondary school for 16- to 24-year-olds when basic skills are accounted for? A cross country comparison

Kjersti Lundetræ
University of Stavanger, Norway

Drop-out from upper secondary school is considered a widespread problem, closely connected with youth unemployment. The aim of the current study was to examine whether parents' level of education predicted drop-out for 16 – 24-year-olds when accounting for basic skills. For this purpose, data from the Norwegian (n ¼ 996) and American (n ¼ 641) samples in the Adult Literacy and Life Skills Survey (ALL) were used. Stepwise logistic regression showed that parents' educational level was a significant predictor of early school leaving in both countries, but explained significantly more of the variance in USA than in Norway. Mothers' educational level predicted early school leaving in USA also when accounting for youth's basic skills, but this was not the case in Norway.

Keywords: early school leaving, drop-out, basic skills, parents' educational level

Research Context

Early school leaving and drop-out from upper secondary school and vocational training, is considered a widespread problem. This applies to Norway and USA, which were the countries of comparison in this study. School drop-out is defined in a range of ways. In Norway, one definition of drop-out is youth who have not completed upper secondary school and training within five years (see e.g. Falch & Nyhus, 2009; Statistics Norway, 2010). In USA, "The status dropout rate represents the percentage of 16- through 24-year-olds who are not enrolled in school and have not earned a high school credential" (Aud et al., 2010, p. 68). In EU, school drop-outs and early school leavers are defined as "persons aged 18 to 24 with at most a lower secondary education (. . .) and not in further education or training" (Eurostat & European Commission, 2009, pp. 68–69). The aim of this paper is to explore the potential role parents' educational level play for drop-out, defined as 16- to 24-year-olds with at most lower secondary education (ungdomsskole in Norwegian) and not in further education and training, in Norway and USA. For this purpose, youth's basic skills were accounted for. This comparison represents a unique contribution to the knowledge in the field. Data from Adult Literacy and Life Skills Survey (ALL) were applied. ALL is a

Kjersti Lundetræ, University of Stavanger.

Many thanks to Egil Gabrielsen for valuable discussions on the paper, and to Bjørn Ellertsen for valuable help on preparing the article. Also many thanks to Knud Knudsen and the Quantitative Forum for discussions of the analysis.

Correspondence concerning this article should be addressed to Kjersti Lundetræ, National Centre for Reading Education and Research, Faculty of Arts and Education, University of Stavanger, N-4036 Stavanger, Stavanger, Norway. E-mail: kjersti.lundetre@uis.no

cross-sectional survey coordinated by Statistics Canada and supported by OECD (Statistics Canada & OECD, 2005).

Norway and USA were examined because they are equal in having undifferentiated school systems (Buchmann & Dalton, 2002). Moreover they represent two different welfare state regimes. According to Esping-Andersen (1990), Norway like the rest of Scandinavia is a social democratic welfare state, where the state plays a dominant role, and the aim is to promote “an equality of highest standards, not an equality of minimal needs” (Esping-Andersen, 1990, p. 27). USA, on the other hand is a liberal welfare state, like other Anglo-Saxon states (Esping-Andersen, 1990). Here, the market plays a dominant role, and welfare provisions by the state are minimal. It should be noted that Esping-Andersen recognized that there is no single pure case. Even though welfare state types cluster, countries within one regime region can have important elements from others (Esping-Andersen, 1990).

In 2003, the rate of drop-out in USA was 10 percent (U.S. Department of Education, 2009), while it was 14 percent in Norway¹ in 2002 (Eurostat & European Commission, 2009). Nevertheless, Norway and USA are among the countries with the highest share in higher education, and 83 percent of the Norwegian and 87 percent of the American 25 – 34-year-olds had attained at least upper secondary education in 2006, while the average was 78 percent in OECD and 80 percent in EU19² (OECD, 2008a).

Over the last decades, educational level and basic skills have been increasingly important regarding employment (Boe, 2005; Bynner & Parsons, 2001; Caspi, Wright, Moffitt, & Silvia, 1998; Commission of the European Communities, 2000; Ministry of Education and Research, 2006; Rychen & Salganik, 2003). Rate of unemployment tends to be higher among less educated youth (International Labour Office, 2004; Lundstræ, Gabrielsen, & Mykletun, 2010; Ministry of Education and Research, 2006; OECD, 2008a, 2008b). At the age of 25–29, when most young people have finished their studies, access to employment is often linked to educational level, and “The lack of an upper secondary qualification is clearly a serious handicap” (OECD, 2008a, p. 381).

Previous research has identified a range of factors predicting early school leaving and drop-out (see e.g. Aud et al., 2010; Barton, 2005; Jensen & Andersen, 2006; Markussen, 2010; Markussen, Frøseth, Lødding, & Sandberg, 2008; Rumberger, 2004; Rumberger & Palardy, 2005; Rumberger & Sun Ah Lim, 2008; Shannon & Bylsma, 2003). These include personal factors like low self-esteem, academic self-concept and low ambitions; family factors like socio-economic background, single parent family and immigrant; and education related factors such as grades from secondary school, school climate and adult-student-relationships. Among the family factors, parents’ education has been found to influence educational outcome (Iannelli, 2002; Jensen & Andersen, 2006; Markussen et al., 2008; Rumberger & Sun Ah Lim, 2008) and performance in reading, science and mathematics (OECD, 2004). Also, expectations and influence from significant others, such as peers and parents, are found to be important to young peoples’ educational attainment and academic aspirations (Buchmann & Dalton, 2002; Coleman, 1988; Sewell, Haller, & Portes, 1969).

Coleman (1988, p. S104), introducing the concept social capital, claims that “Norms in a community that support and provide effective rewards for high achievement in school greatly

¹The Norwegian statistics relates to 18–24 years olds.

²EU19 refers to the 19 OECD countries that are EU-members and for which data are available or can be estimated.

facilitate the school's task". In a random sample of 4,000 students in public high schools, he found 8.6 percentage points in difference in drop-out rates in favour of those whose mothers were expecting them to go to college as opposed to those whose did not, when human capital in terms of parents' education, and financial capital were accounted for. According to Coleman, children will not profit by parents' human capital if it is not followed by social capital in the family, which are relations between children and parents.

Based on data from the Third International Math and Science Study (TIMSS) where representative samples of 13-year-olds participated, Buchmann and Dalton (2002) found that peers and parents play an important role for educational aspirations in countries with relatively undifferentiated secondary schooling, like USA and Norway. For Norway, parent's education was the best predictive variable in the model. Iannelli and Smyth (2008) found that highly educated parents increase the likelihood for youths to enter higher education. Thus, social inheritance seems to obstruct equal educational opportunities. Still, countries vary in the extent to which parents' education affect young people's educational outcomes (Iannelli & Smyth, 2008).

Parents' educational level predicts 15-year-olds' performance in mathematics, reading and science in both Norway and USA (OECD, 2004). PISA 2003 displayed significant differences in mathematics performance between students whose father completed upper secondary school and students whose father completed primary or lower secondary education in Norway, and in mathematics, reading and science in USA. Mother's education displayed even larger significant differences in all three topics in both countries. The differences in performance between students with and without parents with upper secondary education were pronouncedly larger in USA than in Norway (OECD, 2004).

Educational level is highly correlated with basic skills in terms of literacy and numeracy skills (Statistics Canada & OECD, 2005). In Norway, marks from lower secondary school was the variable that best predicted accomplished upper secondary school (Markussen, et al., 2008). Prior educational attainment was also found to be a determinant of drop-out from post-compulsory education in the UK (Bradley & Lenton, 2007) and in USA (Hill & Jepsen, 2007). Also, high school dropouts at age 19 had significantly lower reading score at age 15 compared to those who graduated in both Canada (Knighton & Bussière, 2006) and the Nordic countries (Jensen & Andersen, 2006). Poor basic skills could therefore be suggested as one reason for drop-out. Still, it might be that youth drop out or leave school before accomplishing upper secondary school and training even though their basic skills are good.

The educational system is undifferentiated both in Norway and USA, meaning that there is no curricular or ability-based tracking in secondary school (Buchmann & Dalton, 2002), and that all students have access to upper secondary education in both countries. Still, marks from lower secondary school can impact on students' options when it comes to choice of school or course.

Social democratic and liberal states spend about the same share of total public spending on education (Hega & Hokenmaier, 2002). The between school variance in student performance is, however, often larger in liberal welfare states than in social democratic welfare states (OECD, 2007). This indicates that the schools are of more equal quality in social democratic countries.

In USA, education is mainly provided by the public sector, and control and funding come from three levels; federal, state and local. In elementary school and high school, school curriculum, funding, teaching and other policies are decided through locally elected school boards. Educational standards and standardised testing is usually done by state governments.

The compulsory school age vary by state, and begins at five to eight and ends at age fourteen to eighteen. About 10 percent of all students in elementary and high school were enrolled in private schools in 2003 (Broughman & Swaim, 2006).

As for Norway, 2 percent of the students in primary/secondary school and 5 percent of the students in upper secondary school were enrolled in private schools in 2003 (Statistics Norway, 2008, 2009). The compulsory start age is six, and compulsory school ends at age sixteen. All students follow the same curriculum which is decided by central authorities (Mullis et al., 2008).

Liberal welfare states seem to favour general education at upper secondary level (Hega & Hokenmaier, 2002), and offer vocational programmes only after this level (OECD, 2008a). Social democratic countries, on the other hand, offer both general academic training as well as a broad range of vocational trainings alongside a more general academic curriculum. In 2003, approximately 48 percent of the Norwegian students attended vocational tracks, while 52 percent attended general studies (Statistics Norway, 2005).

Further research is needed to explore what role social capital in terms of parents' educational level plays for drop-out, when accounting for the youth's basic skills. This paper conducts such a study based on data from Norway and USA. In this study, social capital is expressed through parents' educational level, as this variable was available in the ALL-data. Parents' reading and/or numeracy skills, parents' engagement with children's school work, and parents' educational expectations or attitudes towards education are examples of variables that could have been used instead or in addition to educational level.

Research Questions of this Study

As demonstrated through the literature review, several factors seem to be important for drop-out from upper secondary school and training, including parents' educational level, distribution of basic skills, school systems and culture. This paper is based on data from ALL 2003, and addresses the following research questions:

- (1) What role, if any, does parents' educational level play for drop-out in Norway and USA?
- (2) What role, if any, does parents' educational level play for drop-out when accounting for youth's basic skills in Norway and USA?

Methods

Study Design

ALL is a comparative, cross-sectional study, where the first part was carried out in 2003. It is a follow-up of International Adult Literacy Survey (IALS), and both studies were coordinated by Statistics Canada and supported by OECD. The ALL is designed to enlighten public policy in areas such as education, labour market policy, human resource development and social development (Murray, Clermont, & Binkley, 2005). Development of the ALL, methodology, and definition of levels of difficulty are described in the international reports *Learning a Living* (Statistics Canada & OECD, 2005) and *Measuring Adult Literacy and Life Skills* (Murray et al., 2005).

Representative national samples aged 16 to 65 years were assessed in the domains of Prose and Document Literacy, Problem Solving and Numeracy, and background information was gathered through an interview. Canada, Italy, Norway, Switzerland, USA and Bermuda participated, and data from Norway and USA were used in this study.

The statistical analyses were based on the Item Response Theory (Murray et al., 2005), which briefly means that the pilot study data were used to place each task on the 0 – 500 scale according to its difficulty level. The same scale was also used to rank individuals on the test dimensions. The scale was divided into five levels, where level 1 was the lowest.

Sample

The sample consisted of 1,637 16–24-year-old American and Norwegian respondents. A total of 8.2 percent of the Norwegians and 17.9 percent of the Americans were drop-outs (see Table 1). The number of Norwegian drop-outs was lower in the sample than in statistics provided by Eurostat and European Commission (2009), where 14 percent of the Norwegian 18–24-year-olds were identified as drop-outs in 2002. The fact that 16- and 17-year-olds are included in the sample, and that they primarily are students, may explain some of the discrepancy.

Data Collection

Data were collected at home during 2003 and started with a comprehensive background questionnaire. Participants who passed some core tasks on level 1 were then given one out of 28 task booklets. There were no time limits, and the respondents could use a ruler and a calculator for the numeracy tasks. Approximately an average of 2 hours was spent in each home (Statistics Canada & OECD, 2005).

Measurements

ALL measured functional literacy and numeracy skills. Literacy was defined as: “using printed and written information to function in society, to achieve one’s goals, and to develop one’s knowledge and potential” (Statistics Canada & OECD, 2005, p. 280). The distinction between prose and document literacy tasks was formed by using continuous (prose) or non-continuous (document) texts. Numeracy was defined as “the knowledge and skills required to effectively manage and respond to the mathematical demands of diverse situations” (Statistics Canada & OECD, 2005, p. 292).

Table 1
Distribution of 16–24-year-olds’ Educational Status in ALL

	Norway (%)	USA (%)	Total
N (16-24 years)	996	641	1637
Completed upper secondary school and training or in school	914 (91.8)	526 (82.1)	1440
Not completed upper secondary school and training, not in school (drop-out)	82 (8.2)	115 (17.9)	197

Both literacy and numeracy skills are considered to be traditional basic skills (Commission of the European Communities, 2000), and are often associated with adult learning, as in the United Kingdom, where basic skills education is related to literacy and numeracy education for adults (Reder, 2006).

In this study, the prose and document scales were combined into a composite literacy scale and then combined with the numeracy scale into a composite *basic skills* scale. The Cronbach's alpha was .97. *Basic skills* ranged from 121.47 to 394.24 (Mean $\frac{1}{4}$ 289.86, SD $\frac{1}{4}$ 41.06) in Norway, and from 103.72 to 389.79 (Mean $\frac{1}{4}$ 269.84, SD $\frac{1}{4}$ 48.12) in USA.

In addition to basic skills, the independent variables *respondent born in country of interview*, *mother born in country of interview* and *father born in country of interview*, all coded 0 $\frac{1}{4}$ no, 1 $\frac{1}{4}$ yes, were used in the analyses. On average, 93 percent of the Norwegian, and 90 percent of the American respondents were born in country of interview. Also, 90 percent of the Norwegian and 83 percent of the American parents were born in country of interview. The variables *mother's educational level* and *fathers' educational level* were also used in the analyses. Educational level was divided into low (secondary school), medium (upper secondary school and training) and high (at least bachelor degree). Low education was the reference category.

The dependent variable in this study, *drop-out from upper-secondary school and training*, were based on a combination of two items: "What is your current work situation?" and "Which qualifications are the highest you have obtained?". Those who had obtained only secondary school, and were not students, were defined as early school leavers or drop-outs.

Data Analyses

SPSS 15 for Windows was used for the analyses. Independent samples t-test was used to compare means of basic skills between those who were drop-outs and those who were not. Crosstabs and chi-square tests for independence were used to explore the relationship between parents' educational level and drop-out in Norway and USA.

Stepwise logistic regression analyses were applied to assess the relative importance of parents' educational level on drop-outs when accounting for the possible modifying effects of the independent variables (IVs) as well as the isolated effects of these. At the first step, the IVs *gender*, *respondent born in country of interview*, *mother born in country of interview* and *father born in country of interview* were entered in the analyses. *Respondent born in the country of interview* was entered to control for possible confounding factors due to weaker mastery of the test language (Statistics Canada & OECD, 2005). At the second step, *mother's educational level* and *fathers' educational level* were added. At the third step, basic skills was added to see whether parents' educational level predicted drop-out also when basic skills were accounted for. Missing values in the variables *mother's educational level* and *father's educational level* (3.7 to 7.1 percent missing) were replaced by medians.

Results

The Association Between Basic Skills and Drop-out

There were significant differences in basic skills mean scores between 16–24-year-olds who were drop-outs and those who were not in both countries (see Table 2). The differences were significantly larger in USA than in Norway.

Table 2

Differences in Basic Skills Mean Score in Relation to Drop-out

	Drop-out		Not drop-out		Mean diff.
	Mean (s.e.)	SD	Mean (s.e.)	SD	
Norway	260.46 (4.82)	43.63	292.50 (1.32)	39.80	32.04***
USA	229.87 (4.22)	45.20	277.37 (1.94)	44.43	47.50***

*** p < .001

Parents' Educational Level in Norway and USA

Parents' educational level in terms of low (secondary school), medium (upper secondary school and training) and high (at least bachelor degree) differed between the countries. In Norway, about 20 percent of the 16–24-year-olds' mothers and 16 percent of the fathers had low education (secondary school) (see Table 3). In USA, about 18 percent of the parents had low education. In both countries, medium (upper secondary school and training) was the most common educational level. Furthermore, about ten percent points more of the Norwegian than the American parents had high education (at least a bachelor degree).

Table 3

Parents' Educational Level in Norway and USA (in percent)

	Low education		Medium education		High education	
	Mother	Father	Mother	Father	Mother	Father
Norway	119.9	15.8	42.0	43.6	38.2	40.7
USA	118.3	118.1	551.6	551.3	330.1	330.6

The Association Between Parents' Educational Level and Incidence of Drop-out in Norway and USA

Parents' educational level differed between 16–24-year-olds who were drop-outs and those who were not in both Norway and USA (see Figure 1). The share of parents with low education was highest among the drop-outs within both countries. Chi-square tests³ indicated significant association between mother's and fathers' educational level and drop-out within both Norway and USA.

³Norway: Mother: χ^2 (2, n = 996) = 12.84, p = .00, Cramer's V = .11. Father: χ^2 (1, n = 996) = 14.72, p = .00, phi = .12. USA: Mother: χ^2 (2, n = 641) = 44.31, p = .00, Cramer's V = .26. Father: χ^2 (2, n = 641) = 35.63, p = .00, Cramer's V = .24.

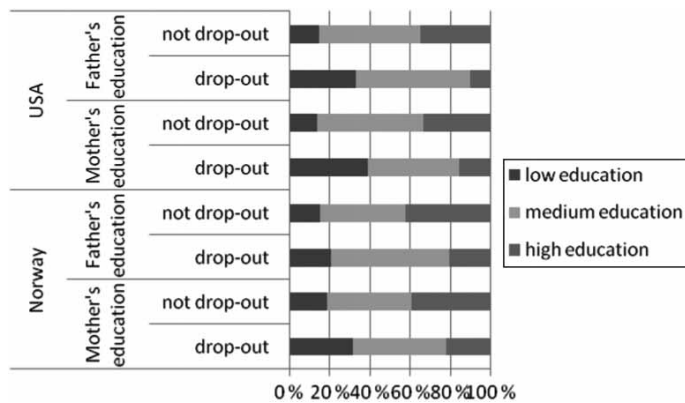


Figure 1. Parents' educational level related to drop-out in Norway and USA.

Basic Skills and Prediction of Drop-out When Accounting for Parents' Educational Level and Respondents' Basic Skills

Norway. Logistic regression was performed to assess the impact of parents' educational level on the likelihood that Norwegian 16–24-year-olds were drop-outs (see Table 4). The model contained 9 independent variables. The full model containing all predictors was statistically significant, $\chi^2(9, N = 993) = 56.78, p < .001$, indicating that the model distinguished between respondents who were drop-outs or not. The model as a whole

Table 4

Logistic Regression. Drop-out and the Role of Parents' Educational Level When Accounting for Basic Skills in Norway

	Step 1		Step 2		Step 3	
	Exp(B)	s.e.	Exp(B)	s.e.	Exp(B)	s.e.
Gender	.82	.23	0.78	0.24	0.79	0.24
Born in country of interview	1.40	.73	1.32	0.76	1.50	0.77
Mother born in country of i.	1.96	.61	1.79	0.65	2.08	0.69
Father born in country of i.	.88	.52	0.92	0.53	1.10	0.56
Mother's education						
Medium/low			0.67	0.28	0.61	0.29
High/low			0.45*	0.35	0.55	0.36
Father's education						
Medium/low			1.13	0.30	1.13	0.31
High/low			0.50	0.38	0.68	0.39
Basic skills					0.98***	0.00
Constant	.04***	.67	0.09**	0.71	4.52	0.98
Nagelkerke R ²	.1		.06		.13	

* $p < .05$, ** $p < .01$, *** $p < .001$

explained between 5.6% (Cox and Snell R square) and 12.8% (Nagelkerke R squared) of the variance in employment status, and classified 91.5% of the cases correctly. As shown in Table 4, no variables were significant at step 1, while only high education of the mother made a unique statistically significant contribution to the model at step 2, recording an odds ratio of .45. This indicated that 16–24-year-olds who had a mother with low education were more than two times more likely to drop out than those who had a mother with at least a bachelor degree. After entry of basic skills at step 3, basic skills was the only significant independent variable when accounting for all other factors in the model, recording an odds ratio of .98.

USA. The American model, containing all predictors was statistically significant, $\chi^2(9, N \frac{1}{4} 622) \frac{1}{4} 114.08, p > .001$, indicating that the model distinguished between respondents who were drop-outs or not. The model explained between 16.8% (Cox and Snell R square) and 28.0% (Nagelkerke R squared) of the variance in drop-out, and correctly classified 84.9% of the cases. As shown in Table 5, only born in country of interview was significant at step 1, while four of the variables made a unique statistically significant contribution to the model at step 2 (born in country of interview, mother’s education medium, mother’s education high and father’s education high). The 16–24-year-olds who had a mother or a father with low education were about four times more likely to drop out than those with a mother or father with high education. After entry of basic skills at step 3, born in country of interview was still significant, and it was almost four times more likely that 16–24-year-olds who were not born in USA should drop out than those who were. Medium or high education of the mother, as opposed to low, decreased the likelihood to drop out about three times, accounting for all other factors in the model. Basic skills was significant, but did only record an odds ratio of .98.

Table 5
Logistic Regression. Drop-out and the Role of Parents’ Educational Level When Accounting for Basic Skills in USA

	Step 1		Step 2		Step 3	
	Exp(B)	s.e.	Exp(B)	s.e.	Exp(B)	s.e.
Gender	1.08	.22	.97	.23	.94	.24
Born in country of interview	.32*	.47	.32*	.49	.26*	.54
Mother born in country of i.	1.23	.53	1.53	.59	2.57	.64
Father born in country of i.	1.37	.48	2.34	.55	2.09	.57
Mother’s education						
Medium/low			.29***	.30	.29***	.21
High/low			.25***	.37	.37*	
Father’s education						
Medium/low			.71	.31	1.08	.21
High/low			.24**	.42	.56	
Basic skills					.98***	.00
Constant	.35***	.30	.83	.34	69.14***	.76
Nagelkerke R ²	.2		.17		.28	

*p > .05, **p > .01, ***p > .001

Summary and Discussions

The findings in this paper are based on representative, high quality cross-country data from 2003, and offer contributions to the knowledge of how parents' education impact drop-out in the welfare regimes studied.

Social inheritance seems to obstruct equal educational opportunities in both welfare regimes, as parents' educational level was found to influence drop-out in both Norway and USA. The findings can therefore be assumed to be applicable to similar welfare states. Furthermore, the findings coincide well with previous research on the influence of parents' educational level on educational aspirations in countries with relatively undifferentiated secondary schooling, like USA and Norway (Buchmann & Dalton, 2002). They also coincide with findings showing that highly educated parents increase the likelihood for youth to enter higher education (Iannelli & Smyth, 2008) and predict better results in mathematics, reading and science for 15-year-olds in PISA (OECD, 2004).

In Norway, only mother's educational level was significant, in contrast to USA, where both parents' educational level had an impact on drop-out. Low education of the mother, compared to high education, increased the likelihood for drop-out to well over two times in Norway and four times in USA, where the same effect was found for the father. In addition to the pronounced difference in the effect of mothers' educational level on drop-out, parents' educational level explained much more of the variance in USA than in Norway.

The effect of mother's education on drop-out beyond what is explained by basic skills was found in USA only. The likelihood for drop-out was more than three times as large for youth with low educated mothers compared to youth with high educated mothers in USA even when comparing youth with equal basic skills. This is in line with Esping-Andersen (2007) who found that Norwegian children born to less-educated parents were six times as likely as the American children to go beyond upper secondary school. Also, fathers' educational level was no longer significant. Mothers' education seems to be more important for youth's educational outcome than fathers'. This is also supported by previous cross-country research (OECD, 2004).

The findings that parent's educational level had no effect on drop-out beyond what was explained by basic skills in Norway offer strong empirical support for the claim that mothers' education seems to impact equal educational opportunities to a greater extent in the liberal USA than the social democratic Norway. This is in accordance with previous research on the influence of parents' education on 15-year-olds' performance in reading, mathematics and science (OECD, 2004). Moreover, it might seem that the educational system in the social democratic welfare regime is more successful in levelling out social differences and heritage than the educational system in the liberal welfare regime.

Even though the educational system is undifferentiated in both Norway and USA (Buchmann & Dalton, 2002), the between school variance in student performance is generally larger in USA (OECD, 2007). Also, in USA some students have to repeat a class to enter the next grade (Barton, 2005; Shannon & Bylsma, 2003), and are thereby more likely to drop out of school. The Norwegian right to individually adapted education (Norway, 2008), and the absence of repetition of classes might contribute to neutralize differences to a certain degree.

Coleman (1988) stated a significant difference in drop-out rates in favour of those whose mothers were expecting them to go to college as opposed to those whose did not. The higher impact of mothers' education on drop-out in USA than in Norway when accounting for basic skills might indicate fewer differences in expectations and school supportive attitudes among Norwegian mothers, regardless of educational level, but more research is needed to tell.

Homework could also be questioned as it increases social differences in school (Rønning, 2011). While pupils with high educated parents perform better when homework is given, the other pupils are unaffected. Replacing homework with more time in school could possibly give better educational attainment for students receiving less support from their parents, and thereby lead to less drop-out. Prior educational attainment is a strong predictor of drop-out (Bradley & Lenton, 2007; Hill & Jepsen, 2007; Knighton & Bussière, 2006; Markussen et al., 2008).

Both early home environment and socioeconomic status is associated with dropouts at age 19 (Jimerson, Egeland, Sroufe, & Carlson, 2000), and early intervention could reduce the rate of drop-out (Jimerson et al., 2000). The most effective way to counteract drop-out due to differences in social capital could therefore be to place an effort in the educational system, including kindergarten, as it has been shown to be a tool that to a certain degree levels out social and cognitive differences (Esping-Andersen, 2005).

When it comes to preschool age, there are large differences between liberal and social democratic welfare states (Esping-Andersen, 2005). In Norway, most children attend public or private kindergarten (OECD, 2006), which “is basically of uniform, high standards, meaning that children from disadvantaged families benefit disproportionately” (Esping-Andersen, 2006, p. 405). American day care, on the other hand, is of very variable quality, and children from disadvantaged families are likely to be concentrated at the lower end (Blau, 2001; Esping-Andersen, 2006; Helburn & Bergmann, 2002).

By investing in kindergarten, and thereby children’s learning and welfare, children might be more equally prepared for school, independent of their parents’ education. It could also be avoided that children of low educated American mothers drop out to a greater degree than children of low educated Norwegian mothers.

Also, basic skills should be emphasised all the way through the educational system, as it is important to accomplish upper secondary school and training, and thereby to enter further education and employment.

More research is needed to tell whether the findings in this study are applicable to other welfare states. Also, a longitudinal design is needed to provide knowledge about how basic skills in pre-school age and in primary school influence drop-out, and to establish causal connections.

References

- Aud, S., Hussar, W., Planty, M., Snyder, T., Bianco, K., Fox, M., Frohlich, L., Kemp, J., & Drake, L. (2010). *The Condition of Education 2010* (NCES 2010-028). Washington, DC.: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.
- Barton, P.E. (2005). *One-Third of a Nation: Rising Dropout Rates and Declining Opportunities*. Princeton, NJ: Policy Information Center, Educational Testing Service.
- Blau, D. (2001). *The Child Care Problem: An Economic Analysis*. New York: Russell Sage.
- Boe, R. (2005). Unemployment risk trends and the implications for Canadian federal offenders. *Forum on Corrections Research*, 17(1), 3–5.
- Bradley, S., & Lenton, P. (2007). Dropping out of post-compulsory education in the UK: An analysis of determinants and outcomes. *Journal of Population Economics*, 20(2), 299–328.
- Broughman, S.P., & Swaim, N.L. (2006). *Characteristics of Private Schools in the United States: Results From the 2003–2004 Private School Universe Survey*. Retrieved July 1, 2009, from <http://nces.ed.gov/pubs2006/2006319.pdf>.

- Buchmann, C., & Dalton, B. (2002). Interpersonal Influences and Educational Aspirations in 12 Countries: The Importance of Institutional Context. *Sociology of Education*, 75(2), 99–122.
- Bynner, J., & Parsons, S. (2001). Qualifications, Basic Skills and Accelerating Social Exclusion. *Journal of Education & Work*, 14(3), 279–291.
- Caspi, A., Wright, B.R.E., Moffitt, T.E., & Silva, P.A. (1998). Early Failure in the Labor Market: Childhood and Adolescent Predictors of Unemployment in the Transition to Adulthood. *American Sociological Review*, 63(3), 424–451.
- Coleman, J.S. (1988). Social Capital in the Creation of Human Capital. *The American Journal of Sociology*, 94, S95–S120.
- Commission of the European Communities (2000). A Memorandum on lifelong learning. Brussels: Commission of the European Communities.
- Esping-Andersen, G. (1990). *The three worlds of welfare capitalism*. Cambridge: Polity Press.
- Esping-Andersen, G. (2005). Education and Equal Life-Chances: Investing in Children. In O. Kangas & J. Palme (Eds.), *Social Policy and Economic Development in the Nordic Countries* (pp. 147–163). Basingstoke: Palgrave Macmillan.
- Esping-Andersen, G. (2006). Social Inheritance and Equal Opportunity Policies. In H. Lauder, P. Brown, J.-A. Dillabough, & A.H. Halsey (Eds.), *Education, Globalization & Social Change* (pp. 398–408). Oxford: Oxford University Press.
- Esping-Andersen, G. (2007). Equal opportunities and the welfare state. *Contexts*, 6(3), 23–27.
- Eurostat, & European Commission (2009). *Key figures on Europe - 2009 edition*. Luxembourg: Office for Official Publications of the European Communities.
- Falch, T., & Nyhus, O.H. (2009). Frafall fra videregående opplæring og arbeidsmarkedstilknytning for unge voksne [Drop-out from upper secondary school and training and young adults' labour market affiliation]. Trondheim: Senter for økonomisk forskning AS.
- Hega, G.M., & Hokenmaier, K.G. (2002). The Welfare State and Education: A Comparison of Social and Educational Policy in Advanced Industrial Societies. *German Policy Studies*, 2(1), 143–173.
- Helburn, S.W., & Bergmann, B.R. (2002). *America's Child Care Problem: The Way Out* (1st Palgrave ed.). New York: Palgrave for St. Martin's Press.
- Hill, L.E., & Jepsen, C. (2007). Positive outcomes from poor starts: Predictors of dropping back in. *Economics of Education Review*, 26(5), 588–603.
- Iannelli, C. (2002). Parental education and young people's educational and labour market outcomes: A comparison across Europe. In I. Kogan & W. Müller (Eds.), *School-to-work transition in Europe: Analyses of the EULFS 2000 Ad hoc module* (pp. 5–30). Mannheim: Mannheimer Zentrum für Europäische Sozialforschung.
- Iannelli, C., & Smyth, E. (2008). Mapping gender and social background differences in education and youth transitions across Europe. *Journal of Youth Studies*, 11(2), 213–232.
- International Labour Office (2004). *Global employment trends for youth*. Geneva: International Labour Office.
- Jensen, T.P., & Andersen, D. (2006). Participants in PISA 2000 – Four Years Later. In J. Mejdning & A. Roe (Eds.), *Northern lights on PISA 2003: A reflection from the Nordic countries* (pp. 239–248). Copenhagen: Nordic Council of Ministers.
- Jimerson, S., Egeland, B., Sroufe, L.A., & Carlson, B. (2000). A Prospective Longitudinal Study of High School Dropouts Examining Multiple Predictors Across Development. *Journal of School Psychology*, 38(6), 525–549.
- Knighton, T., & Bussière, P. (2006). *Educational Outcomes at Age 19 Associated with Reading Ability at Age 15*. Ottawa: Statistics Canada.
- Lundetræ, K., Mykletun, R., & Gabrielsen, E. (2010). Do basic skills predict youth unemployment (16- to 24-year-olds) also when controlled for accomplished upper secondary school? A cross-country comparison. *Journal of Education & Work*, 23(3), 233–254.
- Markussen, E. (2010). Frafall i utdanning for 16-20 åringer i Norden [School drop-out for Nordic 16- to 20-year-olds]. Copenhagen: Nordic Council of Ministers.

- Markussen, E., Frøseth, M.W., Lødding, B., & Sandberg, N. (2008). Bortvalg og kompetanse. [Early school leaving and competence]. Rapport / NIFU step; 13/2008. Oslo: NIFU STEP.
- Ministry of Education and Research (2006). St.meld. nr 16 (2006-2007) . . .og ingen sto igjen. Tidlig innsats for livslang læring. [. . .And no one was left. Early effort for lifelong learning.]. Oslo: Departementet.
- Mullis, I.V.S., Martin, M.O., Olson, J.F., Berger, D.R., Milne, D., & Stanco, G.M. (2008). *Timss 2007 encyclopedia: A guide to mathematics and science around the world*. Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Lynch School of Education, Boston College.
- Murray, T.S., Clermont, Y., & Binkley, M. (2005). *Measuring adult literacy and life skills: New frameworks for assessment*. Ottawa: Statistics Canada.
- Norway (2008). Lov om grunnskolen og den vidaregåande opplæringa (opplæringslova). [The law on primary, secondary and upper secondary education]. Retrieved July 2, 2009 from <http://www.lovdata.no/all/tl-19980717-061-001.html>.
- OECD (2004). *Learning for tomorrow's world: first results from PISA 2003*. Paris: Organisation for Economic Co-operation and Development.
- OECD (2006). *Starting Strong II: Early Childhood Education and Care*. Paris: OECD.
- OECD (2007). *PISA 2006: Science competencies for tomorrow's world*. Paris: OECD.
- OECD (2008a). *Education at a glance 2008*. Paris: OECD.
- OECD (2008b). *OECD Employment Outlook 2008*. Paris: OECD.
- Reder, S. (2006). Foreword. In L. Tett, M. Hamilton, & Y. Hillier (Eds.), *Adult literacy, numeracy and language: policy, practice and research* (pp. xvi, 188 s). Maidenhead: Open University Press.
- Rumberger, R.W. (2004). Why Students Drop Out of School. In G. Orfield (Ed.), *Dropouts in America: Confronting the Graduation Rate Crisis* (pp. 131–155). Cambridge, MA: Harvard Education Press.
- Rumberger, R.W., & Palardy, G.J. (2005). Does Segregation Still Matter? The Impact of Student Composition on Academic Achievement in High School. *Teachers College Record*, 107(9), 1999–2045.
- Rumberger, R.W., & Sun Ah Lim (2008). *Why Students Drop Out of School: A Review of 25 Years of Research*. Santa Barbara: University of California.
- Rychen, D.S., & Salganik, L.H. (2003). *Key competencies for a successful life and a well-functioning society*. Göttingen: Hogrefe & Huber.
- Rønning, M. (2011). Who benefits from homework assignments? *Economics of Education Review*, 30(1), 55–64. doi: 10.1016/j.econedurev.2010.07.001.
- Sewell, W.H., Haller, A.O., & Portes, A. (1969). The Educational and Early Occupational Attainment Process. *American Sociological Review*, 34(1), 82–92.
- Shannon, G.S., & Bylsma, P. (2003). *Helping students finish school: Why students drop out and how to help them graduate*. Olympia, WA: Office of Superintendent of Public Instruction.
- Statistics Canada, & OECD (2005). *Learning a Living. First Results of the Adult Literacy and Life Skills Survey*. Ottawa and Paris: OECD.
- Statistics Norway (2005). *Statistisk årbok for Norge 2005 [Statistic year book for Norway 2005]*. Oslo: Statistics Norway.
- Statistics Norway (2008). *Statistisk årbok for Norge 2008 [Statistic year book for Norway 2008]*. Oslo: Statistisk sentralbyrå.
- Statistics Norway (2009). *StatBank*. Retrieved July 2, 2009, from <http://statbank.ssb.no>
- Statistics Norway (2010). *Younger pupils have lower drop-out rate*. http://www.ssb.no/vgogjen_en/arkiv/art-2010-07-01-01-en.html retrieved September 3, 2010.
- U.S. Department of Education, National Center for Education (2009). *Fast Facts, Dropout rates*. Retrieved July 1, 2009, from <http://nces.ed.gov/fastfacts/display.asp?id=16>