School performance and completion of upper secondary school in the child welfare population in Norway

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Abstract

A vast amount of research has shown a persistent educational disadvantage in the child welfare population. Studies have argued that the less successful educational progression of child welfare clients is due to poor school performance. However, few studies have examined this empirically. In this article, I examine the relationship between school performance in compulsory school and completion of upper secondary school through analyses of population data for child welfare clients in Norway. The present study concerns all child welfare clients, i.e. both child welfare clients who have received assistance measures in the home and child welfare clients who have received out-of-home care. These results are compared with those of a sample from the general population.

We know from previous research that school performance is influential in the transition from lower secondary to upper secondary school, and that academically weak students from less advantaged backgrounds usually attempt the vocational track. In order to reach the Norwegian goal of educational equity, school performance should be of less importance on the vocational track. Consequently, I assumed that low-achievers have higher probability of completing the vocational than the academic track.

The results show that low-achievers complete more often the vocational track than the academic track. However, the vocational track's potential for including low-achievers seems less applicable to child welfare clients.

Introduction

Research over several decades from many countries has shown that children in the child welfare system are less likely to obtain higher educational degrees (Cheung and Heath 1994, Clausen and Kristofersen 2008, Jackson and Cameron 2011). In addition, relatively few obtain upper secondary education (Vinnerljung, Öman, and Gunnarson 2005) and in many countries a rather large proportion of child welfare clients are unsuccessful in completing

compulsory school (Jackson and Höjer 2013). The processes underlying the educational disadvantages of child welfare clients have received little attention (Jackson and Höjer 2013, Berridge 2012). However, several studies link child welfare clients' less successful educational progression to their poor school performance (e.g. McClung and Gayle 2010, Tideman et al. 2011, Forsman and Vinnerljung 2012, Flynn et al. 2012). Nonetheless, analyses of the relationship between school performance and child welfare clients' educational attainment are few and, with the exception of studies from Sweden (i.e. Berlin, Vinnerljung, and Hjern 2011, Vinnerljung, Berlin, and Hjern 2010), are based on very small samples (e.g. Hedin, Höjer, and Brunnberg 2011, Jackson and Cameron 2011). In this article, I examine the relationship between child welfare clients' school performance in compulsory school and school completion through analyses of population data for Norway. I ask to what degree child welfare clients' educational attainment is related to school performance and to what degree child welfare clients need better grades than their peers in order to complete upper secondary school. Previous research on educational attainment in the child welfare population has largely concerned those who have been placed outside home. However, the present study concerns all child welfare clients, i.e. both clients who have received assistive measures inside the home or other alternatives to placement and clients who have received care measures like foster homes.

In Norway, almost everybody completes compulsory school and more than 95 per cent of one cohort proceed directly to upper secondary school (Hernes 2010). However, around 30 per cent fail to complete upper secondary school (Statistics Norway 2010). Hence, the first crucial transition point within the Norwegian educational system is not the transition from compulsory school to upper secondary school, because 'everybody' makes that transition, but within upper secondary school. Consequently, this article focuses on child welfare clients' completion of upper secondary school and the relation to prior school performance.

Furthermore, the Norwegian upper secondary school system consists of two tracks – the academic and vocational tracks. In Norway, as in most countries, the vocational track in upper secondary school prepares students for the labour market and provides less access to university and other tertiary education. In addition, the vocational track is usually attempted by academically weak students and students from less advantaged backgrounds. As a consequence, the vocational track is considered to reinforce pre-existing socio-economic inequalities in educational outcomes (Shavit and Müller 2000, Holm et al. 2013). Based on the over-representation of poor school performance in the child welfare population, it is likely

that relatively more child welfare clients start on the vocational track, which has also been confirmed in a recent Norwegian study (Dæhlen 2014). However, contrary to prior research regarding the vocational track as a mechanism for reproduction of social inequality, I ask whether the vocational track has the potential for increasing the social inclusion of low achievers in general and child welfare clients in particular. The reason for assuming that low achievers have better prospects of completing the vocational track rather than the academic track is derived from Norwegian educational policy. In Norway, equity is an explicit educational goal. The vocational track, as in many countries, recruits students with lower school performance and a lower socio-economic background than the academic track (Markussen 2010). Consequently, with the aim of reaching the goal of social inclusion in upper secondary school, a method that suppresses the influence of school performance (and subsequently the influence of socio-economic background) on completion seems to be more vital on the vocational track. Thus, I carry out analyses of the link between school performance and completion of upper secondary school on both the vocational track and the academic track.

Moreover, being in the child welfare system is strongly related to low parental education. In the social work research context, where the bulk of research on child welfare clients' education has been carried out, few studies have adjusted results for the education of birth parents on child welfare clients' educational attainment. In the analyses of the association between child welfare clients' prior school performance and completion of upper secondary school, I use data that include information about their parents' educational level. In addition, possible gender differences in completion of upper secondary school are examined.

The data comprise all child welfare clients born in the period 1986–1989 and a comparison sample born in the same period.

The Norwegian context

The number of child welfare clients is increasing in Norway. In 2011, almost four per cent of all children younger than 19 receive welfare benefits (Backe-Hansen et al. 2014). Approximately 84 per cent of all measures are given as assistance measures in the home, while care measures (i.e. placements in foster homes or institutions based on the issuance of a care order) accounted for around 16 per cent (Statistics Norway 2011). Furthermore, child welfare clients comprise more boys than girls, 55 per cent boys and 45 per cent girls. In

addition, as in other countries, child welfare clients are over-represented in the low-socio-economic-status population (Clausen and Kristofersen 2008).

Compulsory education in Norway consists of ten years of schooling – seven years of primary school (ages 6–13) and three years of lower secondary school (ages 13–16). Students have a right to upper secondary school (three or four years from age 16 until age 21) and, as mentioned, more than 95 per cent of a given cohort proceed directly to upper secondary education after compulsory school (Hernes 2010). Both primary school and lower secondary school are based on a common national curriculum, but the upper secondary structure is divided into vocational studies and general/academic studies. About six out of ten students enrol in vocational studies, while four out of ten choose the academic track (Statistics Norway 2005). The academic track prepares students for the next educational transition – to university, university college, or private schools at the tertiary level – and the vocational track prepares students for the labour market. The academic track consists of three years in school, while the main model on the vocational track consists of two years in school and two years of apprenticeship. Instead of the two-year apprenticeship, vocational students can take one year of supplementary study, and passing the required exams qualifies them to enter university or other tertiary education. About one-third of vocational students choose to take this supplementary course of study; however, the drop-out rate is high (Markussen and Gloppen 2012).

Explaining differences in educational completion

Research on differences in educational attainment has largely been carried out in the tradition of social stratification research. This research tradition has established that educational attainment depends on two separate mechanisms – primary and secondary effects of socio-economic background (Boudon 1974, Jonsson and Rudolphi 2011). Primary effects of socio-economic background are that children from advantaged origins perform better in school and, consequently, tend to continue in education. Secondary effects are that children from advantaged origins also decide to continue their education more often than others due to a lower valuation of the costs and a higher valuation of the benefits of education than children from less advantaged origins, given their school performance. Consequently, according to Boudon's concept of secondary effects, children originating from families of low socio-

economic background need better grades to decide to continue their education compared with their peers originating from families of high socio-economic background.

Child welfare clients are over-represented among those with a low socio-economic background (Jackson and Cameron 2011, Clausen and Kristofersen 2008), which is likely to be an important factor in explaining their educational disadvantage. However, because previous research shows very poor educational outcomes in the child welfare population, it seems reasonable to assume that being a child welfare client involves an extra disadvantage in the educational system in addition to what we would expect based on their socio-economic background. Drawing on Boudon's concepts, which were designed to account for persisting class differences in educational attainment as well as its application in explaining differences by migrant origin (Jackson, Jonsson, and Rudolphi 2012, Boado 2011) and gender (Breen et al. 2010), I examine the importance of school performance on child welfare clients' educational attainment. The study is guided by the following research questions:

Q1: To what extent is child welfare clients' completion of upper secondary school related to grades from compulsory school?

Q2: Does the relation between school grades and completion of upper secondary school differ between child welfare clients and their peers?

In order to eliminate the influence of social origin and educational success on the child welfare clients' completion of upper secondary school, parents' educational background was included in the analyses. In addition, child welfare clients' completion of upper secondary school was compared with a stratified sample from the general population.

Furthermore, choice of educational track in Norway, as in many other countries, is divided by gender. While boys constitute the majority of students on the vocational track, girls constitute the majority on the academic track (Statistics Norway 2013b). In addition, girls have on average better school performance than boys (Statistics Norway 2013a). In order to exclude any influence of gender from the analyses of the relation between school performance and child welfare clients' completion of upper secondary school, gender was also included in the analyses.

Finally, students on the two tracks differ by school performance. Consequently, the relation between school grades and completion of upper secondary school was analysed by

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track. This made it possible to examine whether school performance was less important on the vocational track compared with the academic track, which was an assumption based on a possible potential for social inclusion on the vocational track as argued in the Introduction.

Data and method

The data come from public registers of Statistics Norway and comprise all children born in the period 1986–1989 who were in the child welfare system for one or more years during the period 1990–2009, which amount to 22 660 child welfare clients. As mentioned, about four per cent of all children receive welfare benefits, but since the child welfare clients may receive benefits several years the share in the longitudinal research data is about 12 per cent. Information about type of child welfare measures received and for how long they have been in the child welfare system, is not available in this study.

In addition, the data set includes a representative sample of 23 610 peers from the same birth cohorts in the general population. From this representative sample, a comparison group was constructed as follows: the representative sample was stratified by parents' educational level and cases were randomly selected so the composition of parental educational level in the comparison group matched the parental educational level in the child welfare population. Since parents' educational level is higher in the population without child welfare experience compared to the child welfare population, many cases were randomly removed from the data set (about 16 000 cases were removed). This method is used in order to make the two groups of students (child welfare clients and the comparison sample) as alike as possible in order to reduce the influence of the highly educated parents in the comparison sample on the estimates. In addition, somewhat more boys were randomly selected than girls for the comparison group, because there were more boys in the child welfare population. Consequently, the child welfare clients are compared with a sample from the general population that has been matched to the child welfare population by gender and parental educational level.

The data set includes information on highest completed educational level in 2010, final compulsory school grades in different subjects, gender, and parents' highest educational level.

Dependent variable

The highest completed educational level was measured in 2010 (spring), which implies that the youngest respondents (born in 1989) turned 21 during the year and the oldest (born in 1986) turned 24 during the year when their educational level was measured. The data contains information on completed vocational programme (nine different programmes) or academic programme (three different programmes). In addition, the data contains information on any completed exams at the tertiary level. An education variable was constructed measuring the highest completed educational level: 0 = compulsory, 1 = vocational, 2 = academic, and 3 = tertiary. Figure 1 illustrates the highest educational level for the child welfare clients and for the comparison sample.

Figure 1 about here

Seven out of ten child welfare clients had only completed compulsory school (70 per cent). In the comparison sample less than four out of ten had only completed compulsory school (35 per cent). Furthermore, only 12 per cent of child welfare clients had completed the vocational track, compared with 21 per cent of the general population group. About 15 per cent of child welfare clients, as against 32 per cent of the comparison group, had completed the academic track. At the stage in life when they were surveyed, few had passed an exam at the tertiary level – three per cent in the child welfare population compared with 11 per cent in the comparison group.[i] However, recall that respondents were only 21 to 24 years old when surveyed, and the proportion that continue into higher education and pass exams will increase.

In the analyses, students who have passed exams at the tertiary level will be analysed together with students who have completed the academic track, because starting university or other tertiary education depends on completing the academic track.[ii] Consequently, the respondents' educational level was divided into three categories: 0 = compulsory school, 1 = academic upper secondary, and 2 = vocational upper secondary.

Independent variables

In this study, the concept of child welfare clients comprises all children/youths in child welfare services and not only those who have been placed outside home. Children investigated by the child welfare service are not included if no measures in-home or out-home for at least one year were implemented. Analyses showed that for the birth cohorts in this

study about three out of four child welfare clients were given assistance in the home (74 per cent), while one in four (26 per cent) were living in foster homes and/or institutions. This group of child welfare clients is presumably very different from each other – e.g. some have received child welfare assistance for several years while some have been in the system for one year. In addition, some did receive child welfare measures as a child while other received assistance more recently. The reason for being in the child welfare system may also be very different; e.g. some due to abuse and/or neglect from their parents, some due to becoming an orphan, while other received help from the child welfare services due to own behavioral problems. Consequently, this group of child welfare clients represents a heterogenic group of young people and the relation between educational completion and school performances within the group of child welfare clients may differ. Thus, differences between different groups of child welfare clients and the relationship between school performances and completion should be looked at further detailed in other studies. However, it seems reasonable to assume that for instance child welfare clients receiving assistance due to own behavioral problems perform relatively poor in school and receive low grades. Subsequently, (some of) the heterogeneity in the child welfare group will probably be expressed by differences in school grades.

Child welfare clients are compared with a comparison sample from the majority population without child welfare experience. This comparison sample has been matched to the child welfare population by gender and parental educational level (see Data and method).

School performance was measured by students' final compulsory school grades. Students were given grades in 13 different subjects (three grades in Norwegian, two grades in English and one grade in Maths, Social Studies, Natural Science, Christian and other religious and ethical education, Music, Home Economics, Art and Crafts, and Physical Education. The grades are given on a six-point scale from 1 = lowest to 6 = highest. A grade variable was constructed measuring the means of all the grades. However, not all students were given grades in all subjects. Still, students who obtain grades in half of the subjects (seven grades), apply for upper secondary school based on these grades. If information was missing on one, two or several grades, the mean grades were based on the remaining grades as long as at least grades in seven subjects were available. In the child welfare population, 37 per cent missed grades in one or more subjects, while in the comparison group, 17 per cent missed grades in one or more subjects. The entrance requirements for upper secondary school allow also application from students with missing grades in more than half of the subjects. Such cases

are decided by the exercise of discretion and consequently, the importance of grades play another role in such cases. Since the emphasis in the present study is the relationship between grades and educational attainment, students who missed grades in seven or more subjects (in total six per cent of the sample) were excluded from the following analyses. In the child welfare population, seven per cent missed grades in seven subjects or more, compared with two per cent for the comparison group. In Table 1, the mean grades in both the child welfare population and the comparison sample are given, together with descriptive statistics for all the independent variables.

Table 1 about here

The results show that child welfare clients' mean final compulsory grades were lower compared with those of their peers in the comparison sample. On a scale from 1 to 6, the child welfare clients' mean grade was 3.2, compared with 3.9 in the comparison group. Furthermore, the table shows only small differences between the child welfare population and the comparison group's composition by gender and parental educational level, which is a result of the sample from the general population being randomly selected to match the child welfare population.

Parent's education was measured by the educational level of the more highly educated parent.[iii] From this information, a variable was constructed, here divided into five categories: (1) lower secondary school (or less); (2) short upper secondary school (one or two years completed); (3) upper secondary school (academic or vocational); (4) higher education; and (5) unknown parental education.

A variable was constructed based on the respondents' gender: 0 for female and 1 for male.

Four variables were constructed based on the respondents' birth year and included in the analyses as a control for any differences in the relationship between school grades and completed education by age. As seen in Table 1 there is a five percentage point difference between the oldest and the youngest cohorts probably due to an increase in numbers of child welfare clients in the period. In addition, this difference may also be affected by the oldest cohorts have had a shorter record period than the oldest. Since the data set comprises clients in the child welfare system in the years 1990-2007, children born in 1986 who got child welfare assistance the first fours years of their lives and not later, will not be included in the data set. For the youngest birth cohort any child welfare service will be registered from the age of one year. However, including birth year in the analyses reduces this problem.

Statistical analyses.

Stepwise multinomial logistic regression was used to estimate the relationship between school grades and the probability of completing academic and vocational upper secondary school. The contrast group was the peers (in both the child welfare population and the comparison group) who had not completed upper secondary school (i.e. compulsory school as the highest educational level). Wald tests were conducted to analyse whether the estimates were statistically different from zero. The results of the analyses are reported as logits. In addition, I estimated the probabilities of completion by grades. These probabilities are illustrated. Group comparisons in logistic regression (e.g. the size of the logits for the child welfare population compared with the comparison group) can be problematic because the size of the logits can reflect the size of unobserved heterogeneity (see e.g. Mood 2010, Allison 1999). Separate analyses for the child welfare population and the comparison group were carried out and consistently showed that the logits in the comparison group differed from the logits in the child welfare population, which is a rough indication that the differences in the size of the logits between child welfare clients and the comparison sample are less dependent on unobserved heterogeneity (Allison 1999). In addition, I carried out the same analyses as the following logistic regression analyses using linear regression. In these analyses, I carried out separate analyses for those completing the vocational track and the academic track, both of which were compared with those who did not complete upper secondary school. These results supported the results of the multinomial logistic regression analyses of the relationship between school grades and completion of upper secondary school.

However, any differences in the relationship between school grades and completed upper secondary education in the child welfare population and the comparison group could be caused by other systematic differences between the two groups, which also correlate with grades. For example, even if the child welfare population is a multifaceted group of boys and girls, many of them have had a difficult upbringing and/or childhood that might not only influence their school performance, but also their educational aspirations. In the present study, it has not been possible to examine the importance of systematic differences within the child welfare population that might influence the relationship between grades and completion of upper secondary school. However, in an earlier study of child welfare clients' educational aspirations, the results showed roughly equal levels of educational aspiration among child welfare clients and their peers as final-year students in compulsory school (Dæhlen 2014). However, the importance of different upbringings (e.g. different child welfare measures received), and including a wider array of biological, family and/or other background covariates should be looked at in further detail in another context.

Results

Table 2 presents the results of the multinomial logistic regression analyses. Model I tested the presumed relationship between child welfare clients' school grades and completion of upper secondary school. The results show that, controlled for the relationship between background variables (gender, birth year, and parents' education), completion of upper secondary school was strongly related to grades from compulsory school. However, the relationship was much stronger for students who completed the academic track than for students who completed the vocational track – both compared to their peers who did not complete upper secondary school. An increase of one in the mean grade entails a bigger increase in the probability for those who completed the academic track than for those who completed the vocational track (the logits are 2.51 and 0.96, respectively). In addition, the results show that the mean grade (and the background variables) did not explain the difference between the child welfare clients' and the comparison sample's completion of upper secondary school. The probability of a child welfare client completing upper secondary school remained lower than that of their peers in the comparison sample.

Thus far, the results support the assumption that completing upper secondary school correlates with the mean grade from compulsory school, but that the correlation is stronger on

the academic track than the vocational track, and that the low educational attainment in the child welfare population is not fully explained by child welfare clients being academically weaker than their peers.[iv] In addition, the negative relation of being a child welfare client is more or less the same for both tracks (-0.81 and -0.85 on the academic and vocational track, respectively).

In model II, I tested whether the relation between school grades and completion of upper secondary school differs between child welfare clients and their peers by introducing an interaction variable for school grades and child welfare clients in the model. The results show that child welfare clients needed better grades to have the same chance of completing the vocational track (the negative logit of having been a child welfare client is roughly identical with the result in model I). However, the results show that grades had the same effect on completing the vocational track in the child welfare population and in the comparison sample (the logit for the interaction variable = 0.00). On the other hand, the relation between having been a child welfare client and the probability of completing the academic track weakened and was no longer statistically significant when introducing the interaction variable in model II. In addition, the results show a negative and statistically significant effect of the interaction variable on the probability of completing the academic track (-0.21). The latter indicates that the effect of school grades on completing the academic differs track between the two groups – i.e. that the positive effect of grades on completion is weaker for child welfare clients than in the comparison group. Of the remaining variables, the changes in the logits from model I to model II were small.

Consequently, these results support the assumption that the reason for child welfare clients' low educational attainment in upper secondary school is related to school performance, but that this relationship differs on the academic and the vocational track. Child welfare clients' completion of the academic track seems to be explained by their educational capability when entering upper secondary school (i.e. school performance from compulsory school). However, on the vocational track there is a disadvantage of being a child welfare client, irrespective of grades.

Moreover, the results in model I and model II show that girls, controlled for the influence of grades, being a child welfare client or not, birth year, and parents' education, more often complete the academic track than boys, and that boys more often complete the vocational track, which is not surprising due to sex segregation in upper secondary school. However, it may be the case that the correlation between school grades and completed

academic/vocational track is different for boys and girls in the child welfare population compared with boys and girls in the comparison sample. Separate analyses for boys and girls partly support this. The results indicate that the negative effect of the interaction variable for school grades and child welfare clients on the academic track only applies to boys. The interaction variable is not statistically significant for female child welfare clients. However, these girls have a lower probability of completing the academic track independent of their school performance. The negative interaction effect of having been a child welfare client on completion of the academic track, as shown in Table 2, applies only to the boys (see Appendix II).

Figure 2 illustrates the relationship between grades and the probability of not completed upper secondary school, completed the vocational track and completed academic track, respectively.

Figure 2 about here

Figure 2 shows that the probability of not having completed upper secondary school decreases with increasing school grades. The figure illustrates the probability for boys who were born in 1986, and had low parental education (lower secondary or less). For these boys, few among those who had a mean school grade of two completed upper secondary school, while almost everybody with a mean school grade of five completed upper secondary school (92 percent and seven per cent in the child welfare population, respectively. In the comparison sample 84 per cent among the boys with a mean grade like two and two per cent among the boys with a mean grade like five did not complete upper secondary school). The next two graphs show the probability of completed the vocational and academic track, respectively.

For the same boys (i.e. born in 1986 originating from families with low parental education) with a mean school grade about three (which is about the mean grade in the child welfare population, see Table 1), 16 per cent of the child welfare clients completed the vocational track and seven per cent completed the academic track. In the comparison group, 29 per cent of these boys completed the vocational track and 11 per cent completed the academic track. Thus, 60 per cent of these boys in the comparison sample and 77 per cent of these boys in the child welfare population had not completed upper secondary school in the age of 21-25. In addition, the figure illustrates that the difference between the two groups on

completion when comparing students with the same level of school performance were smaller on the academic track than on the vocational track.

Discussion

The analyses provide clear evidence of a positive relationship between school performance and completion of upper secondary school in the child welfare population. Child welfare clients are over-represented among those with low school grades in compulsory school, and the results show that low school grades when entering upper secondary school decreased the probability of completing upper secondary school. However, the poor educational attainment in the child welfare population compared to the comparison sample is not only to be explained by child welfare clients being academically weaker than their peers are. The relation between school performance and educational attainment differs between the academic and the vocational track in upper secondary school, and between child welfare clients and the comparison sample. The results show that students with low school grades have best prospect of completing upper secondary school on the vocational track. However, this prospect seems somewhat less applicable to child welfare clients compared to their peers with low school grades. My finding that child welfare clients fare worse on the vocational track even when controlling for grades, gender, and parental education – factors that previous research has shown to be important for educational attainment – is inconsistent with the idea of equity in education, which is an important goal of Norwegian educational policy. However, it is clear that low achievers have better prospects on the vocational track than on the academic track, but that this potential remains less promising for the child welfare population than for their peers. These results indicate that child welfare clients experience a double educational disadvantage. Firstly, their school performance in compulsory school is relatively low. Secondly, relatively few complete the vocational track even when taken their school performance into account.

A double educational disadvantage in the child welfare population is found in a Swedish study. Berlin, Vinnerljung, and Hjern (2011) show that even if school performance in primary school is strongly linked to completion of secondary education, children in long-term foster care and children with in-home interventions have a higher risk of not completing upper secondary school compared to the majority population. The results in this article support the Swedish findings; school grades are important explanations of child welfare

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clients' educational disadvantage, but grades (together with parental education and gender) do not explain the whole disadvantage – at least not at the vocational track, which is probably the track that the majority of the child welfare clients often start on (Dæhlen 2014).

However, the findings in the present study demonstrate the necessity for examining child welfare clients' different educational routes after compulsory school in order to examine the relationship between school performance and educational attainment. The results that show that child welfare clients' with low school performance fare worse than their peers with low school performance on the vocational track, indicate that child welfare clients on the academic track may be positively selected by individual factors that have not been taken into account in this study. It may be the case that child welfare clients on the academic track have higher cognitive ability and lower presence of behaviour problems compared to the child welfare clients on the vocational track, which are not reflected in school grades. However, studies from Sweden show that child welfare children with the similar cognitive capacity than peers, received lower grades (Vinnerljung, Berlin, and Hjern 2010, Vinnerljung and Hjern 2011). Based on these studies, it is reasonable to conclude that child welfare clients' school performance express the same level of cognitive capacity as in the comparison sample.

In addition, even if parental educational level in the family of origin was included in the analyses, the family upbringing in the child welfare population and the comparison sample is obviously very different. Researchers from the cross-national project YIPPEE (Young People in Public Care – Pathways to Education in Europe) argue that child welfare clients lack support and encouragement for their education due to their family circumstances, and suggest that in order to improve their educational attainment, an increase in support and encouragement from teachers, social workers, and other professionals (Jackson and Cameron 2011, Jackson and Höjer 2013) is required. Thus, one explanation of child welfare clients' double educational disadvantage may be that they experience less educational support than peers with the same grades from families with the same parental educational level do. However, this does not explain why the relation between school performance and completion of the vocational track differs from the completion of the academic track.

A more reasonable explanation for the different relation between school performance and completion on the two educational tracks seems to be related to the Norwegian vocational training system. As mentioned, the vocational track includes two years of apprenticeship after two years in school. Perhaps the child welfare clients experience more difficulties in getting an apprenticeship contract. Child welfare clients, who receive care measures outside the

home, experience often numerous care placements, which may involve several changes of school. This is seen as a reason for social difficulties in school and subsequent early dropping out of school (Frederick and Goddard 2010). A Norwegian study found that the average child welfare client in out-of-home care had 2.5 moves over the seven to eight years during which they were monitored (Christiansen, Havik, and Andersen 2010). Moreover, changes in care placements that involve moves may cause an additional challenge for child welfare clients on the vocational track if employers prefer to offer apprenticeships to applicants they know or to applicants who are recommended by someone they know, arguments that have been used in explaining problems ethnic minority applicants face in finding an apprenticeship placement (Helland and Støren 2006). Furthermore, it may be (an additional) factor that employers favour youths without a child welfare background when hiring apprentices. Consequently, successful transitions on the vocational track may be particularly difficult in the transition from the second year in secondary school to the apprenticeship period. In this study, information about types of child welfare measures received and/or numbers of moves due to changes in care placements was missing. However, based on the results in the present study including information about e.g. numbers of moves should be important in future research when examining educational attainment in the child welfare population.

Conclusion

This article has shown that completion of upper secondary school in the child welfare population is strongly related to prior school performance. However, a difference was found between school grades and completion of the academic track and completion of the vocational track. While completion of the academic track was found to be strongly related to school grades from the compulsory school years, the relation between grades and completion of the vocational track was weaker. In addition, for low achievers the probability of completion was somewhat higher on the vocational track compared with the academic track. However, this applies less to child welfare clients than to students in the comparison group.

The results show that even after taking school grades in compulsory school into account and controlling for gender, birth year, and parents' educational level, the probability of completion in the child welfare population is less than that in a comparable sample. However, this applies less to the academic track than the vocational track. This article cannot explain the additional educational disadvantage on the vocational track in the child welfare

population, apart from pointing to previous research that emphasizes individual factors (like behavioural problems and cognitive ability), numerous care placements and school changes, and/or the need for extra educational support and encouragement. More research is needed to examine this at different transition points in upper secondary school – both quantitative and qualitative research. However, the finding in this article implicates that measures improving students' school performance are important in increasing both child welfare clients and their peers' educational attainment. Still, this conclusion applies only to the academic track. Additional actions are needed to increase child welfare clients' completion of the vocational track.

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[i] Because the comparison group comprised more boys and more respondents from families with low educational levels, the figure does not illustrate the educational levels in the majority population. Analyses show that in the majority population, more respondents had completed upper secondary school and exams at the tertiary level; 19 per cent had completed the vocational track, 38 per cent had completed the academic track, and 14 per cent had taken an exam at the tertiary level. In the majority group, 29 per cent had compulsory school as the highest completed level.

[ii] Students who complete the supplementary course after two years on the vocational track may also gain entry to university or other tertiary education. In the analyses, these students were considered to have completed the academic track.

[iii] Apparently, some of the child welfare clients have only been living with one of their biological parents while other have been brought up in foster care. However, in the analyses I use information of the more highly educated biological parent, which may imply that the educational recourses in the child welfare clients' upbringing are not correctly included. If possible, this is an issue that should be looked at in further detail in other studies.

[iv] In order to determine the strength of the correlation between grades and completion of upper secondary school, analyses without grades were carried out. The results showed more or less the same pattern as in Table 2, but a relatively stronger negative relationship for child welfare clients on the probability of completed education. In addition, the results showed some differences in the relation between gender, parental education, and completion. However, it is problematic to compare results across models due to problems with unobserved heterogeneity in logistic regressions. The results are shown in Appendix I.

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Table 1. Descriptive statistics for the child welfare population and the comparison sample (all born during in 1986 – 1989)

	Child welfare population	Comparison sample	
Gender			
Boys	52.5	52.7	
Girls	47.5	47.3	
Total	100.0	100.0	
Parents' education			
Unknown	2.6	1.8	**
Lower secondary or less	27.5	26.9	
Upper secondary - short	14.4	14.4	
Upper secondary	30.1	30.7	
Higher education	24.8	26.2	
Total	100.0	100.0	
Birth year			
1986	22.2	22.0	
1987	24.0	24.8	
1988	26.3	26.1	
1989	27.5	27.1	
Total	100.0	100.0	
Grades			
Means	3.23	3.85	a
SD	0.81	0.81	
(N)	(21,050)	(7,498)	

Note: ** the difference in means is statistically significant from zero at the 0.01

a difference in means is statistically significant from zero at 0.01 level (independent sample test).

SD: Standard deviation

Table 2. Probability for completing academic and vocational upper secondary school by grades for child welfare clients and the comparison sample. Adjusted for gender, birth year and parents' educational level (multinomial logistic regression, all born during the period 1986 – 1989)

	Model I						Model II					
	Academic			Vocational			Academic			Vocational		
	B	SE		B	SE		B	SE		B	SE	
Constant	-6.61	0.11	**	-2.67	0.09	**	-7.04	0.14	**	-2.68	0.14	**
Child welfare clients	-0.81	0.04	**	-0.85	0.04	**	-0.21	0.21		-0.86	0.15	**
Grades												
Mean grades (ref = 1)	2.51	0.03	**	0.96	.028	**	2.66	0.06	**	0.97	0.05	**
Mean grades * Child welfare clients							-0.21	0.07	**	0.00	0.06	
Gender (ref = girls)	-0.22	0.04	**	0.28	0.04	**	-0.22	0.04	**	0.28	0.04	**
Parents' education (ref: lower secondary or less)												
Upper secondary short	0.17	0.06	*	0.30	0.06	**	0.16	0.06	*	0.30	0.06	**
Upper secondary	0.19	0.05	**	0.28	0.05	**	0.19	0.05	**	0.28	0.05	**
Higher education	0.54	0.05	**	-0.04	0.05		0.54	0.05	**	-0.04	0.05	
Unknown	0.12	0.13		-0.33	0.13	*	0.12	0.13		-0.33	0.13	*
Birth year (ref: 1986)												
1987	-0.21	0.05	**	-0.23	0.05	**	-0.21	0.05	**	-0.23	0.05	**
1988	-0.42	0.05	**	-0.56	0.05	**	-0.42	0.05	**	-0.56	0.05	**
1989	-0.80	0.05	**	-1.17	0.05	**	-0.80	0.05	**	-1.17	0.05	**
- 2 Log Likelihood	16942.07 df=20					**	16932.05 df=22					**
Goodness of fit	12427.73 df=12184						12336.12 df= 12182					
N	28,548						28,548					

Note: **p<0.01, *p<0.05 (waldtest). SE= standard errors.

Reference category: girls in the comparison sample, originating from families with lower secondary education or less as highest parental education, born in 1986 with a mean grade from compulsory school = 1.

Appendix I. Probability for completing academic and vocational upper secondary school for child welfare clients and the comparison sample, adjusted for gender, birth year and parents' educational level (multinomial logistic regression, born during the period 1986 – 1989)

	Academic			Vocational		
	B	SE		B	SE	
Constant	0.27	0.05	**	-0.31	0.06	**
Child welfare clients	-1.64	0.03	**	-1.18	0.04	**
Gender (ref = girls)	-0.87	0.03	**	0.02	0.04	**
Parents' education (ref: lower secondary or less)						
Upper secondary short	0.49	0.05	**	0.41	0.05	**
Upper secondary	0.58	0.04	**	0.40	0.05	**
Higher education	1.43	0.04	**	0.25	0.05	**
Unknown	0.29	0.11	**	-0.25	0.13	
Birth year (ref: 1986)						
1987	-0.06	0.04		-0.17	0.05	**
1988	-0.20	0.04	**	-0.47	0.05	**
1989	-0.42	0.04	**	-1.01	0.05	**
-2 Log Likelihood		1102.47 df=18				**
Goodness of fit		259.26 df=140				**
N		28,548				

Note: **$p<0.01$, *$p<0.05$ (waldtest). SE= standard errors.

Appendix II. Probability for completing academic and vocational upper secondary school by grades for child welfare clients and the comparison sample. Separate analyses for girls and boys, adjusted for parents' educational level and birth year (multinomial logistic regression, born during the period 1986 – 1989)

	Girls						Boys			
	Academic			Vocational			Academic			
	B	SE		B	SE		B	SE		
Constant	-6.53	0.26	**	-2.09	0.23	**	-7.61	0.26	**	-2
Child welfare clients	-0.60	0.30	*	-1.14	0.26	**	0.01	0.30		-0
Grades										
Mean grades	2.47	0.09	**	0.76	0.08	**	2.82	0.09	**	1
Mean grades * Child welfare clients	-0.08	0.10		0.14	0.10		-0.27	0.11	*	-0
Parents' education (ref: lower secondary or less)										
Upper secondary short	0.14	0.08		0.16	0.08		0.17	0.10		0
Upper secondary	0.22	0.07	**	0.14	0.07	*	0.13	0.08		0
Higher education	0.51	0.07	**	-0.26	0.08	**	0.55	0.08	**	0
Unknown	0.27	0.19		0.20	0.18		-0.01	0.19		-0
Birth year (ref: 1986)										
1987	-0.24	0.07	**	-0.31	0.08	**	-0.19	0.08	*	-0
1988	-0.37	0.07	**	-0.54	0.08	**	-0.48	0.08	**	-0
1989	-0.65	0.07	**	-1.09	0.08	**	-1.00	0.08	**	-1
-2 Log Likelihood	8057,30 df=20					**	8788,80 df=20			
Goodness of fit	5496,80 df=5583						6687,05 df=6576			
N	13,556						14,992			

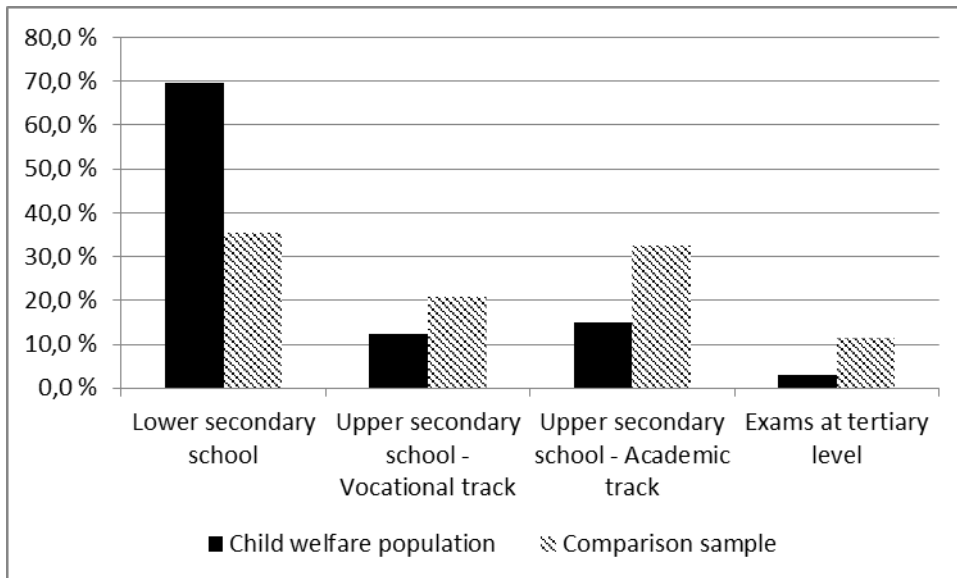Note: Note: **p<0.01, *p<0.05 (waldtest). SE= standard errors.

Figure 1. Highest educational level in 2010 for child welfare population and the comparison sample (respondents born in the period 1986 – 1989, N= 30,315).
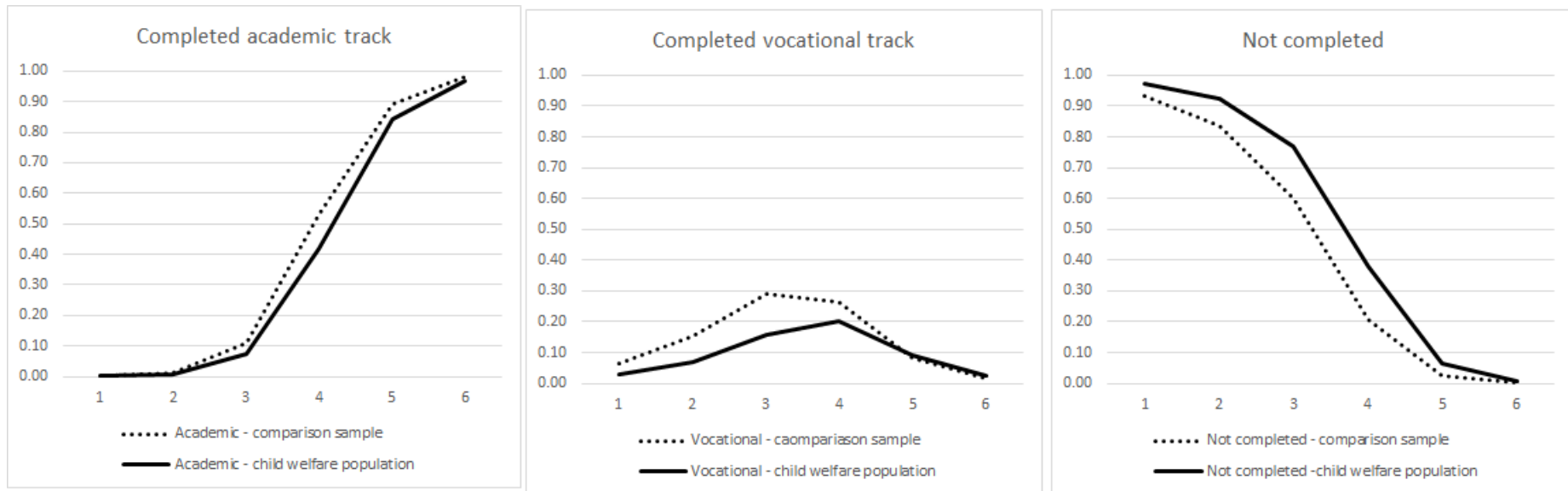
Figure 2. The relationship between grades and completed and not completed upper secondary school for child welfare clients and the comparison sample (all born during the period 1986 – 1989)

Note: from Table 2, model II. Illustrates the relationship between grades and completion for boys born in 1986, from families with educational level similar to lower secondary or less.