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ABSTRACT

An Intensive, School-Based Learning Camp Targeting Academic and Non-Cognitive Skills Evaluated in a Randomized Trial*

We evaluate two variants of a school-based, intensive learning camp for pupils who are assessed `not ready' for further education after compulsory school, using a stratified cluster randomized trial involving 15,559 pupils in 264 schools in Denmark. Next to training pupils in Danish and mathematics, the main variant targets non-cognitive skills, while the alternative variant instead uses this time for more training in Danish and math. In the short-run, in the academic areas that are targeted in the camp, we find small positive effects in math and weak evidence for positive effects in Danish. Yet, we find no evidence of lasting effects and we do not find short-run effects on non-targeted areas in math and Danish or on non-cognitive skills. Further, we find no evidence that training of non-cognitive skills affects academic outcomes. These results provide a perspective on recent evidence regarding the effects of training non-cognitive skills in schools - by running such an intervention with older pupils and in a comparatively high-resource school system.

JEL Classification: I21, C21, D91, I28

Keywords: randomized trial, remedial education program, non-cognitive skills

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1 Introduction

All over the world, education systems struggle with a large tail of underperforming pupils. In a recent PISA study (OECD, 2019), 23 percent of pupils were below the minimum level of proficiency in reading that all children should have acquired by the end of lower secondary education. In mathematics, the share scoring below this threshold was 24 percent. Such outcomes are a problem for at least two reasons. First, it is a sign of inefficiency in the education system if pupils do not fulfil their educational potential. Second, low achieving pupils often come from a disadvantaged background, thus exacerbating low intergenerational mobility and persistent educational inequality of opportunity.

Numerous public and private remedial education programs exist that target low-achieving pupils. One popular form of such programs are intensive learning camps, where pupils train, during the summer and outside of their own school, one or a few subjects intensively during a limited time period (typically 1-4 weeks). The aim of this study is to evaluate, using a large stratified cluster randomized trial involving 15,559 pupils in 264 schools in Denmark, the impact of an intensive, school-based learning camp that targets both academic outcomes and non-cognitive skills.

Compared to traditional intensive learning camps our camp includes novel elements in terms of being school-based in combination with targeting both academic and non-cognitive skills. There is reason to believe that combining these elements can strengthen the impact of intensive learning camps. First, running such a camp at a pupil's own school during regular school hours can remove potential barriers to participation. For example, Lee et al. (2006) document that many potential participants face barriers to participation in after-school or summer school programs targeting at risk pupils, most notably getting to and from the program and participation in other activities. Second, being school-based permits teachers to follow-up on the learning camp, both in the associated follow-up program and during regular teaching, and ensures longer-lasting engagement by the pupils. Third, it is widely recognized that non-cognitive skills play an important role for academic performance.[1] Furthermore, recent evidence points to such non-cognitive skills being malleable over a short time frame: Alan and Ertac (2018) and Alan et al. (2019) use randomized trials to document large and lasting effects – also on academic outcomes – of training elementary school pupils in Turkey in non-cognitive skills related to patience (the former study) and perseverance (the latter study). Thus, the many and diverse reasons for which pupils fall behind in their learning can potentially better be addressed by complementing the commonly applied 'more of the same' training on academic

[1]For example, Duckworth et al. (2007) demonstrates the importance of grit for academic achievement. Duckworth and Seligman (2005); Duckworth et al. (2012) shows that self-control is as important as IQ in predicting academic performance and Eskreis-Winkler et al. (2014) observe that grit predicts completing school, among other outcomes. Heckman et al. (2006) and Almlund et al. (2011) examine the predictive power of various personality measures (vs. IQ).

skills with training on non-cognitive skills.[2]

Accordingly, we ran two variants of a two-week camp, conducted at the school of a participating pupil during the regular teaching hours, targeting grade 8 pupils in Denmark, who are assessed as 'not ready for further education'.[3] After the camp, pupils participated in follow-up program where they met once a week for eight weeks. In addition to math and Danish, the main learning camp variant devoted roughly 30 percent of the time to strengthen the non-cognitive skills of pupils. For example, pupils (and teachers) learned about self-regulation strategies – such as goal setting (Locke and Latham, 1990) and mental contrasting with implementation intentions (Gollwitzer et al., 2011); and they were introduced to the concept of "growth mindsets" (Dweck, 2006), which reflects a view that ability is malleable and that success is driven by effort. In the alternative variant of the camp, the time spent on training non-cognitive skills in the main variant was instead used for extra training in math and Danish. The motivation for testing two variants of the camp stems from the uncertainty as to whether non-cognitive skills can be manipulated during an intervention as short as the one studied here and which is aimed at 8^{th} graders rather than younger pupils. The two variants allow us to investigate if the time spent training non-cognitive skills makes a difference relative to using it for additional training of academic skills.

An advantage of our study is that we can exploit Danish register data to evaluate the effects of the camps using standardized national tests. In doing so, we can circumvent issues that other studies face when relying on teachers' evaluations of pupils' skills (the treatment may affect teachers' evaluations rather than pupils' actual academic level) or tests designed by the researchers (the problem of 'teaching to the test'). The national tests were conducted briefly after the interventions and thus provide short-run effects of the interventions. In each subject, these tests measure the competencies of the pupil in different areas – some of which were targeted in the camp (such as numbers and algebra in math or text and language comprehension in Danish) and some of which were not (such as decoding in Danish or geometry and statistics and probability in math). This allows us to test both for direct effects of the camp on learning and for indirect spillover effects to other academic areas. Further, we measure the long-run effects of the camp using grades in the final exams in grade 9, which were given one year after the intervention and involved external examiners, and by looking at post-compulsory education enrollment.

[2]First, there are intellectual disabilities, dyslexia/dyscalculia, and other medical/neurological causes. Second, psychological causes comprise, for example, math anxiety, low self-efficacy, and low levels of conscientiousness/grit (e.g., OECD, 2013). Third, sociological causes include primarily the learning environment and the fact that some children grow up in less advantaged circumstances than others, and this affects their ability to learn. Lastly, didactic factors reflect inadequate teaching methodologies and variations in teacher quality (e.g., Hanushek and Rivkin, 2006; Hanushek, 2011).

[3]Between a quarter and a third of a school cohort are considered to be 'not ready for further education' by the end of lower secondary education (Undervisningsministeriet, 2017a,b). Denmark has 10 years of compulsory schooling and starts counting with grade 0. So grade 8 corresponds to grade 9 in other countries.

We observe small, positive short-run effects on the targeted area in mathematics (numbers and algebra). In Danish, the evidence for positive effects is weaker as only one out of the two targeted areas (namely, text comprehension) is positively affected by the camp. In terms of long-run effects, we do not find any effects that are statistically significant at conventional levels. There is some weak indication of the camp having a positive impact on math performance in the final exams in grade 9 and on being enrolled in post-compulsory education three years after the camp.

We also examine the effects on non-cognitive skills. Next to self-administered pre- and post-surveys that included several psychological scales, we observe in the register data how school counsellors evaluated a pupil's readiness for further education, and use here specifically the evaluation of the personal and social skills. We do not observe any positive effects on any of these outcome measures for the main learning camp that trained non-cognitive skills.

The measurement of non-cognitive skills with surveys and the evaluation of the pupil's readiness for further education has some disadvantages. However, there is some evidence to support the lacking effects on non-cognitive skills as not merely a measurement problem. Firstly, we do not observe any spillover effects to non-targeted academic areas in the standardized national tests. If the intervention at the camps affected non-cognitive skills such as self-control, one could expect the improved non-cognitive skills to broadly enhance academic performance both in targeted and non-targeted areas. This, however, is not the case. Secondly, when comparing the two camps, we primarily find non-significant differences in outcomes between the two, once again underlining the lacking effect of non-cognitive skills. Overall, the results thus suggest that the main camp did not affect non-cognitive skills.

The latter results are in contrast to the studies by Alan and Ertac (2018) and Alan et al. (2019). Their interventions trained non-cognitive skills for a total duration of 24 hours spread over a course of 12 weeks. When compared to our main camp, a similar amount of time was dedicated to training non-cognitive skills with 16 hours devoted solely for this purpose during the two-week camp and revisiting these skills at weekly sessions during the eight-week follow-up program. Ultimately, amounting to a dosage quite similar to that of Alan and Ertac (2018) and Alan et al. (2019). One possible reason for the diverging findings across studies could stem from the different age profiles – the pupils in our study are 15-16 years old, while those in Alan and Ertac (2018) and Alan et al. (2019) are 9-10 years old. Non-cognitive skills may be more malleable in these younger kids than for the pupils in our study (cf. Kautz et al., 2014, for a discussion of differential plasticity of different skills by age). Other differences that we discuss in section 5 are that their interventions focused on a more narrow set of non-cognitive skills than our camp and that they implemented their interventions in a school system with fewer resources[4] compared to the Danish system.

The paper is structured as follows. Next, we discuss the related literature. Section 2 describes

[4]One dimension on which one can measures the resources used in a school system are monetary expenditures per pupil. Denmark has higher expenditures per pupils than the OECD average, Turkey lower expenditures.

the background and design of the study, such as the teaching materials and randomization procedure. We describe the data in section 3 and the results in section 4. Section 5 provides a discussion of possible caveats and interpretations of our findings. The last section contains conclusions.

1.1 Related literature

Our study provides two main contributions by evaluating, using a large randomized trial, a camp that is conducted in school, during school time and is, in doing so, distinguished from the prevalent summer camps. Clean evidence for such school-based camps is limited in the literature. Related evidence, however, exists regarding learning camps during summer, small and medium group instruction in schools, and increased instruction time in school, all of which constitute elements in the school-based intensive learning camp in our study. Yet, the existing evidence is quite mixed, so it is hard to have any a priori expectations regarding the effectiveness of such a camp. Second, we contribute to the literature by including non-cognitive skills in the curriculum of an intensive learning camp. As most existing studies examining non-cognitive skills focus on longer duration programs and/or on younger pupils, the question arises whether the non-cognitive skills of middle-school pupils can be affected during an intensive learning camp.

Intensive learning camps. Recent meta-analyses of intensive learning camps, which are primarily summer camps taking place outside the school system, are Lauer et al. (2006), Cooper et al. (2000), and Kim and Quinn (2013). They all report statistically significant effects on academic outcomes (math and/or reading), albeit with small effect sizes.

Despite a great number of studies on intensive learning camps, there is little causal evidence. Only few studies rely on experiments (based on randomization) or use quasi-experimental methods. The most convincing existing evaluations of intensive learning camps rely on quasi-experimental methods. Among them are studies using a regression discontinuity design (RDD) and data from standardized tests. Mariano and Martorell (2013) exploit test score cutoffs in the assignment to a summer camp for 5th-7th graders in New York. They can track the grades of the pupils up to 2-3 years after the intervention. They find some effects of the camp on English language performance, but little effect on math performance. Matsudaira (2008) study an intensive learning camp for pupils in or above grade 3 in a large urban school district in the U.S. He finds positive effects on math and reading performance around one year after the camp. The RDD of Jacob and Lefgren (2004) is based on the Chicago Social Promotion Policy. They find positive effects on math and reading performance in the short and long run for grade 3 pupils but not for grade 6 pupils. Battistin and Schizzerotto (2019) exploit geographic variations in the implementation of mandatory summer courses for at-risk pupils in Italy. They find negative short term effects on academic performance (the marks given by teachers, final examination and a test based on the PISA tests) in vocational schools and no

effects in academic schools.

The few studies that rely on randomization have small sample sizes.[5] In a study with 573 observations, Somers et al. (2015) evaluate a summer camp for middle school pupils called the Building Educated Leaders for Life program. They find some positive effects on math performance, but little impact on reading. In a study with 263 observations, Lynch and Kim (2017) study a math summer camp for 3rd-9th graders from low-income households in the US. Only the condition where pupils participate in the camp and receive a laptop has an effect on academic performance. In a study with 435 observations, Gorard et al. (2015) study a summer camp for grade 5 and 6 pupils on English and math. They find a short-run effect in English, but no effect in math.

School-based interventions. Dietrichson et al. (2020b) and Dietrichson et al. (2020a) provide systematic reviews and meta-analyses of the large literature on school-based interventions for low achieving pupils in grades k-6 and 7-12, respectively. Taken together, these two studies cover close to 300 interventions, however, non of which could be classified as an intensive learning camp.

Most closely related to our study are programs that increase instruction time in certain subjects, or that analyze the effects of teaching smaller groups. Regarding the latter, Dietrichson et al. (2020b) and Dietrichson et al. (2020a) find that peer-assisted instruction and small-group instruction (1-5 pupils per teacher) has the largest positive effects in comparison to other school-based interventions. Medium-group instruction (6-20 pupils per teacher) also shows significant positive effects, but this category only exists for the review of interventions aimed at grades k-6. Our intervention contributes here with evidence on the possible effects of such medium-group instructions for older pupils.

Regarding the effects of an increase in instruction time, Lavy and Schlosser (2005) exploit the gradual phasing in of schools to identify the causal effect of a program targeting underperforming pupils in Israel in grades 10-12. They find that participating pupils were more likely to receive matriculation certificates. Yet, the program was found to be less cost-effective than alternative interventions. Cortes et al. (2015) use an RDD to study the effects of doubling the instruction time in math for low-skilled 9th graders and find positive effects both in the short and long run.

Non-cognitive skills. Given the importance of non-cognitive skills for academic outcomes, a range of educational programs try to target these skills. Durlak et al. (2010) provide a meta-analysis of after-school programs that have the aim to enhance non-cognitive skills. They report positive effects not only on the non-cognitive skills targeted, but also on academic outcomes. Kautz et al. (2014) summarize the literature on interventions targeting cognitive

[5] In the following, we only review those studies that have at least 100 observations (which is still on the low side in terms of ensuring sufficient power).

and non-cognitive skills in children and adolescents. They emphasize the importance of not only considering cognitive skills (IQ and test scores) when evaluating interventions, but also non-cognitive skills. Further, they point out how interventions for younger children typically have a larger impact than interventions targeted at adolescents or young adults. While the former often impacts non-cognitive skills, the latter often treat problem behavior. They note that the most successful interventions for adolescents are those that target (also) non-cognitive skills.

Unlike intensive learning camps, programs targeting non-cognitive skills typically run over extended periods of time and use or combine mentoring or training for parents and teachers (see, e.g., McCord, 1978; Tierney et al., 1995; Kemple and Willner, 2008; Durlak et al., 2010; Rodriguez-Planas, 2012; Holmlund and Silva, 2014; Martins, 2017; Kosse et al., 2020, for programs targeting a similar age group as our study). Most studies, with the exception of McCord (1978) and Rodriguez-Planas (2012), find positive effects on outcomes. Our study is most closely related to the studies by Alan and Ertac (2018) and Alan et al. (2019) discussed above, as these studies are also school-based and run over a comparable time frame.

2 Study design

2.1 Background

All pupils in Danish public schools undergo an Education Readiness Assessment (ERA henceforth) during the Fall term in grades 8 and 9, and from 2018/2019 also during the Spring term in grade 9. The evaluation is done by the school and encompasses academic outcomes as well as personal and social skills. In a given year, between a quarter and a third of the pupils are assessed to lack the academic, social or personal skills required for a post-compulsory school education (Undervisningsministeriet, 2017a,b). The intensive learning camps in this study are targeted at such "non-ready"-pupils (NR-pupils henceforth).

2.2 Structure of the camp

We evaluate three rounds of intensive learning camps that took place in 2017-2019. There are two variants of the camp: *Camp+* and *Camp*, which vary in terms of whether part of the time is devoted to training non-cognitive skills (*Camp+*) or to additional training in Danish and math (*Camp*). Each camp is implemented by the school's own teachers and pedagogues as a remedial education program. The camps run during the regular school hours.

In each school, approximately 10-14 pupils participate in the camp. Two teachers (or a teacher and a pedagogue) teach these pupils. In case more than 15 pupils participate (a camp may take up to 20 pupils), 3 teachers are present. Prior to the camp, the teachers participate in a two-day work shop during which they learn about the teaching materials, key ideas behind the camp, and the rules and procedures of the camp.

A camp lasts 2 weeks with 35 teaching hours per week (including around one hour of breaks each day). Each day is structured in the same way except for the first and last day of the camp. The consistent structure is supposed to help pupils create learning habits and routines, which in turn facilitate self-control (cf., e.g., the arguments in Galla and Duckworth, 2015). The first day has a longer introduction to the topics in math and Danish and includes brief tests in these subjects; the last day includes summaries for the different subjects and the camp in general. The daily structure is clearly communicated to participants, for example, by posting the timetable of the day on the wall.

Each day starts with welcoming pupils and presenting the program of the day. Each day, pupils have two 2-hour blocks of math and Danish, one subject in the morning and one in the afternoon. In *Camp+* they have two 45-minute blocks covering non-cognitive skills around lunch (one block before lunch and one after). In variant *Camp*, the blocks on non-cognitive skills are substituted by additional blocks of math and Danish, so that pupils in *Camp* have 2.75 hours of math and 2.75 hours of Danish each day. The additional time in *Camp* is mainly used for practicing exercises. Some time also is devoted to explaining different strategies for solving specific problems in math and Danish.

After the two weeks of the learning camp, pupils in *Camp+* and *Camp* continue for 8 weeks in a follow-up program that builds on the material from the camp. Each week during this 8-week period, a teacher (typically one of the camp teachers) meets with 5-7 pupils for 1.5 hours to repeat, practice, and deepen the understanding of the material from the camp and help the pupils to apply the material in their regular school work. In treatment *Camp+*, pupils hence face material covering math, Danish, and non-cognitive skills; while in treatment *Camp*, they only cover math and Danish.

2.3 Teaching materials

2.3.1 Math and Danish

Both camps train pupils in the most important areas in the math and Danish curricula to enable them to catch-up in both subjects and, in the longer run, pass the final exams in grade 9 and commence on an educational trajectory. Due to its intensive nature, the camp does not cover all topics of the curriculum in the respective subject. In math, geometry is not covered and statistics and probability is only covered cursorily. In Danish, decoding, a focus area of the national tests (see below), is not practiced.[6]

Specifically, in math, pupils work with decimal numbers, fractions, percentages, mathematical formulas, as well as general problem solving competencies. They revisit the concepts and perform calculations by hand and with a calculator. Some of the exercises are formulated in a similar way as the ones posed in the compulsory school leaving exam in grade 9.

[6]The decoding part of the national test, for example, asks pupils to separate three words, that were collapsed (like tabooallegiancetyphoon) into individual words.

In Danish, pupils work with topics that are tested in the school leaving exams: language comprehension, spelling (exercises targeted at expanding the vocabulary with the aim to foster a better understanding of texts and writing correctly), and text comprehension (including writing of texts and interpretation and discussion of literary texts). Pupils are confronted with different text genres. Next to literary texts, they read, for example, newspaper articles from different sections (such as news, opinion, science).

Pupils take short math and Danish tests at the first day of camp and at the end of camp. These tests were designed together with the teaching materials. The test results are available to the camp teachers. They give the teachers an indication of the academic strengths and weaknesses of the pupil and inform conversations with the pupil on individual focus areas for the camp.[7]

2.3.2 Non-cognitive skills (variant *Camp+*)

Variant *Camp+* includes teaching modules on non-cognitive skills. The teaching materials contain various exercises and six short videos. Like Alan et al. (2019), we aim not only to teach the pupils certain concepts, but also to teach the teachers how to apply them. Accordingly, the teacher manual and the 2-day teacher training course emphasize, for example, how to create a growth mindset, how to build good working habits by practicing routines and providing structure, how to increase the self-control and attention of pupils, and how to give feedback.

The teaching material on non-cognitive skills includes several components that other studies successfully implemented before. Self-regulation strategies are the first main focus area of the teaching material. Pupils learn about goal setting (Locke and Latham, 1990) and set goals for math and Danish.[8] As goal attainment is enhanced if used in combination with implementation intentions (Gollwitzer and Sheeran, 2006) and mental contrasting (Duckworth et al., 2011; Gollwitzer et al., 2011; Duckworth et al., 2013), the teaching material covers these methods and pupils apply them in concrete situations (such as doing homework). Under mental contrasting, pupils imagine the positive aspects of reaching a goal and then reflect on obstacles that could prevent them from reaching the goal. Implementation intentions are if-then plans, such as "if I try to do my homework, but am tempted to glimpse at my smartphone, I give the smartphone to my mother". Along these lines, pupils also learn about the self-control strategy of situation selection and modification (Duckworth et al., 2016b,a).

Mindsets (Dweck, 2006) are the second main focus of the teaching material. The aim of these modules is to influence the mindset of the pupils in different learning situations, and to

[7]Since these tests were not administered to the control groups, and since their purpose explicitly was to inform the teachers about their pupils' progression during the camp, they are not used in the evaluations. Moreover, they also did not cover the 8-week follow-up period.

[8]The popular writing (for the education context, see, e.g. Conzemius and O'Neill, 2009) has translated the scientific insights on goal setting into the concept of SMART (Specific, Measurable, Achievable, Realistic, and Timely) goals that we also used in the teaching materials.

help them develop a growth mindset. People with a growth mindset believe that ability is not fixed and initially given, but that effort can enhance ability. Such a view can help pupils not to attribute failure to a lack of ability and give up, but instead to persevere. Thus, pupils learn how to handle academic challenges and stay motivated to provide effort.

Identifying and evaluating own strengths and difficulties is the third main focus of the teaching material. Based on the VIA (Value in Action) Classification of Character Strengths (Seligman et al., 2004), pupils learn about the main categories, which are wisdom and knowledge (e.g., creativity and curiosity), courage (e.g., perseverance and honesty), humanity (e.g., kindness), justice (e.g., teamwork and fairness), temperance (e.g., forgiveness and prudence), and transcendence (e.g., hope). Pupils get inspiration and time to work on how to build their strengths, and they learn how to give feedback to other pupils about strengths in a constructive manner.

In addition, during the welcome session in the morning, pupils get an introduction to the "personal or social skill of the day". The teacher encourages the pupils to reflect upon how they want to work on enhancing this skill. During the day, smaller exercises address the skill. The list of the skills of the day correspond to the skills that are assessed in the ERE (motivation, independence, taking responsibilities, tolerance, reliability, respect, preparedness, working together).

Finally, the material includes smaller exercises on various topics, such as learning zones and healthy habits (sleeping enough and healthy eating). To provide small, productive breaks, pupils also work on some fun concentration tasks (for example, painting a mandala) and fun visual illusion tasks.

During the last four sessions, the pupils reflect upon the advice that they would give to another pupil based on what they have learned during the camp and they record this in a video.

2.4 Randomization procedure

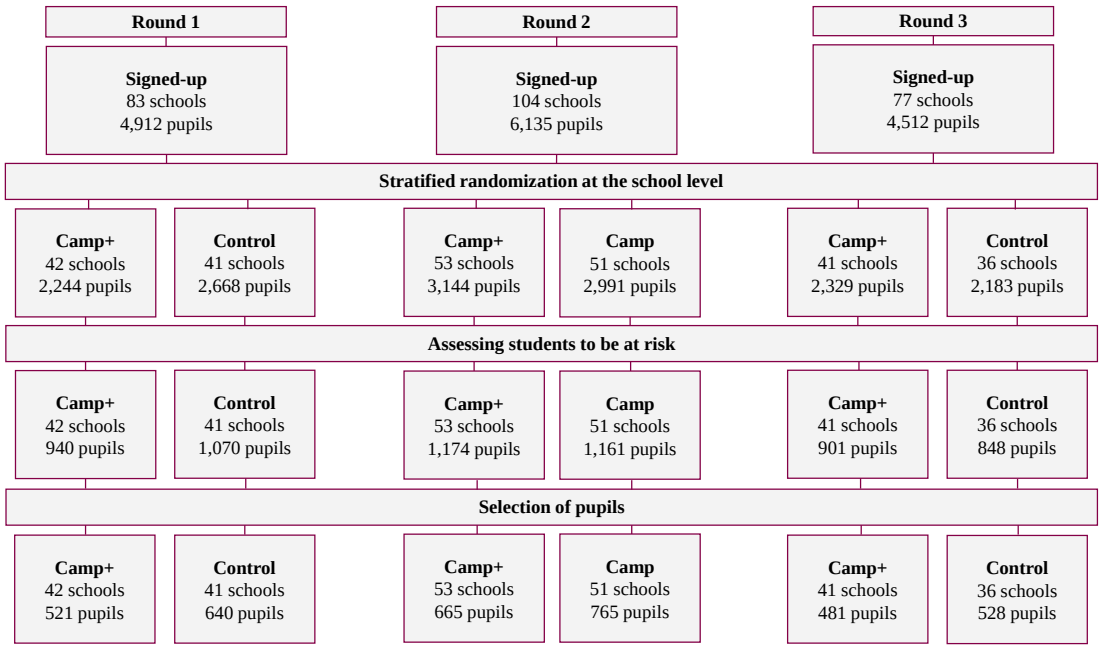
Figure 1 provides an overview of the randomization procedure. The randomization was done at the school level. In rounds 1 and 3, we randomized the schools that signed-up for participation into the treatment variant *Camp+* and a control group. In round 2, we randomized between the two treatment variants *Camp+* and *Camp*.[9] Schools were allowed to collaborate with each other in setting up a camp in order to have a sufficient number of participating pupils. Such schools were treated as one unit in the randomization.

We stratified schools to ensure that similar schools did not all end-up in the same group.

[9]This sequencing and design was a consequence of several factors. First, the design of *Camp* was not ready for round 1, and second, a power issue prevented us from having two treatment arms and a control arm in round 2. Moreover, since there could be differences in selection at sign-up, it would be difficult to compare two variants tested in different rounds against each other. After round 2 found no remarkable differences between the two camps, we decided to test *Camp+* again in round 3 to obtain as much power as possible.

First, schools were divided into strata based on how many camp-classes a school had registered for. Second, we stratified the schools on the basis of their share of NR-pupils in grade 8 in the previous year. After we ranked the schools, we divided them into clusters of six schools. From each cluster, half of the schools were randomly assigned to treatment *Camp+* and half to the control group (round 1 and 3) or *Camp* (round 2).[10]

Figure 1: Overview of the randomization procedure



As the schools needed to plan in advance – e.g., reserving teachers' time for the camp – it was necessary to communicate the results of the randomization to the schools already in the fall, while the camp ran in the following spring term. Thus, the study involves a total of 15,559 pupils at 264 schools. In December 6,094 were assessed as NR-pupils at the ERA and in January 3,600 of the NR-pupils where selected to participate in the camp. In particular, schools in rounds 1 and 3 knew whether they were assigned to the treatment or control group when conducting the ERA and subsequently selecting pupils for the camp.[11] This is less problematic in round 2, because all schools are treated (either with *Camp* or *Camp+*). We will return to this issue in section 3 when discussing balance tests and in section 4.2 when outlining the analysis groups.

[10] In some clusters, there were fewer than six schools, due to the randomization procedure. Thus, there is not necessarily an equal number of schools in the two groups.

[11] Both treatment and control schools designated which pupils would participate in the camp/function as the corresponding control group. In addition, participating pupils and their parents were asked for consent.

2.5 Power

Power calculations indicated that 44 schools were needed in the treatment and 44 schools in the control group to detect a minimum effect size of 0.25 of a standard deviation for the main outcome variables. Pooling rounds 1 and 3 in the analysis yielded 83 treatment schools and 77 control schools. In round 2, we compared two different variants, *Camp* and *Camp+*, which share around 70 percent of the teaching materials. Ex-ante, the effect size difference was expected to be below 0.25. Thus, even though a total of 104 schools participated in round 2, the comparison of the two variants is under-powered, and the results should be interpreted with caution.

2.6 Division of responsibilities

The Ministry of Educational Affairs funded the intervention. A Steering group governed the entire project. The latter consisted of representatives from the ministry, the developing team (University College Copenhagen and VIA University College – two major Danish teacher training colleges), the implementation team (a private consultancy firm, Rambøll Management Consulting), and the research team (the authors of this paper).

The research team directed the design of the intervention. It proposed the intervention and evaluation design. The Steering group approved both without conflict. Randomization was conducted by one of the researchers using STATA's built-in runiform() random number generator. The development team developed the teaching materials for the camp and the follow-up program in consultation with the research team. The research team also provided the input for the material covering non-cognitive skills.[12] The implementation team governed the implementation of the intervention, except for the two-day courses for the teachers, which the development team held. Thus, the research team was only partially involved in the development of the intervention and not at all involved in its implementation. Nevertheless, the PI was responsible for the entire project to the Ministry of Educational Affairs.

3 Data

The analysis is based on registry data from Statistics Denmark, the Danish Agency for IT and Learning, as well as surveys that we carried out among all grade 8 pupils of participating schools. Table 1 provides an overview of the outcome variables, which we also describe in the following. The outcome variables are standardized, with the exception of post-compulsory education choices and the grade 9 ERA.

Short-run academic performance. To measure the short-run academic effects of the camp, we rely on the national tests in math and Danish, which take place in the spring

[12]We thank Kamilla Trille Gumede for her competent assistance in developing this material.

Table 1: Outcome variables

Short-run academic performance		
National test in Danish in grade 8[†]	Language comprehension	(primary)
	Text comprehension	(primary)
	Decoding	(secondary)
National test in math in grade 8[†,a]	Numbers and algebra	(primary)
	Geometry	(secondary)
	Statistics and probability	(secondary)
Long-run academic performance		
Final exam grades in grade 9[†,b]	Danish	(primary)
	Math	(primary)
Post-compulsory education[c]		(primary)
Non-cognitive skills		
Social and personal skills evaluation in grade 9 (ERA)[d]		
Psychological scales administered in the post-survey[†]		

Notes. [†] *Standardized variable.* [a] *Only from 2018, i.e. not available for round 1.*
[b] *Not available for round 3, because final exams were not held due to the Covid-lockdown.*
[c] *Dummy =1 if no further education 2.5 years after the camp and =0 otherwise.*
Not yet available for round 3.
[d] *Evaluated ready/not ready for a particular post-compulsory education.*

of grade 8 (for a description of the national tests, see Beuchert et al., 2014). As the name suggests, these are nationally administered, standardized and computerized tests. The tests are on average administered 36 days after the camp and hence measure the short-run effects of the camp. In math, the grade 8 national tests were only introduced from 2018 on, i.e., we cannot use this outcome measure for round 1 (which took place in the spring of 2017).

In Danish, the tests measure the academic skills of the pupil within the following three areas: language comprehension, decoding and text comprehension. As mentioned above, decoding is not practiced during the camp, while language and text comprehension are. Thus, we expect effects of the camp on the targeted areas language and text comprehension (primary outcome variables). We also test whether there is a spillover effect on decoding (secondary outcome variable). Such a spillover effect can occur, for example, because the pupil, as a result of the camp, gains better self-regulation skills or a growth mindset, because she/he is more motivated, or because the overall Danish skills that she/he acquired during the camp also help with decoding.

In math, the profile areas are numbers and algebra, geometry, and statistics and probability. The main focus of the camp is on numbers and algebra. Thus, we expect a positive treatment effect in this area (primary outcome variable). In addition, as for decoding in Danish, we

test whether there are spillover effects on the non-targeted areas geometry and statistics and probability (secondary outcome variables).

Long-run academic performance. To measure the long-run effects of the camp, we use the final exam grades in math and Danish in grade 9. These grades are given slightly more than a year after the camp. The tests are either computerized or an external censor takes part in these tests. For round 3, final exams were not carried out because of the Covid19-lockdown, and hence these measures are not available.

In Danish, the grades measure the competencies of the pupil in reading, spelling, writing, and speaking. In math, they measure how well the pupil can solve problems without aids and how well she/he can apply formulas with aids (such as computer programs, or calculators). The exams in Danish have both a written and an oral part. In math, all pupils take written tests, and a random draw determines whether a pupil is orally examined in math or instead in another science subject. For math and Danish, we use the respective overall grade as the main outcome variable, but we also report separately results for the written and oral parts in the online supplement.

Moreover, we observe whether pupils enroll in any post-compulsory education (e.g., vocational training, high school, taking the voluntary 10th grade) or take no further education. For round 3, this measure is not yet available. For round 1, we use the status 2.5 years after the camp as an outcome variable.

Non-cognitive skills. We use register data and self-administered surveys to evaluate the effects of the camp on non-cognitive skills. Each of the outcome variables described in the following has certain disadvantages. For this reason, we do not classify outcomes variables as primary or secondary outcome variables. Instead, rather than focusing on the statistical significance of any single measure, we will only conclude that the camp has an effect on non-cognitive skills if different measures point in the same direction.

From the register data, we use the evaluation of the social and personal skills of the pupil in the ERA in grade 9. A potential disadvantage with this measure is that the teachers who conduct the ERA know whether a pupil participated in the camp or not which could potentially influence the evaluation.

From self-administered pre- and post-surveys, we draw on several validated psychological scales (for a detailed description of the included items, see section S. 1 in the online supplement): the 8-item Grit Scale (Duckworth and Quinn, 2009), the Domain-Specific Impulsivity Scale for Children (Tsukayama et al., 2013), the Core Self-Evaluations Scale (Judge et al., 2003), and the Strengths and Difficulties Questionnaire for adolescents (Goodman et al., 1998). We measure beliefs about the malleability of abilities (mindset) with 4 items based on Dweck (2006). Further, we include the 1-item risk aversion question (Dohmen et al., 2011), the 1-item patience question (Vischer et al., 2013) and two questions on time-preferences from the

GSOEP survey.[13] A disadvantage of the survey-based measures is the fact that they are designed by the research team in accordance with the teaching materials. Thus, pupils might give the "desired" answer. Further, the camp might make pupils (and teachers) more aware of certain skills rather than changing them – a difference the survey measures cannot capture.

Control variables and balance tests. The register data allow us to include a range of school-related control variables, such as previous test scores, previous school absence, and previous responses in the national school well-being survey, as well as background characteristics of the pupils such as gender, ethnicity, family situation and variables related to the socioeconomic status of the parents. The balance test tables provide the complete list of control variables (cf. tables S.1-S.3 in the online supplement). Section 4.1 describes how we use LASSO to exogenously select the covariates for each regression.

The balance tables demonstrate that in all three rounds there is balance between treatment and control over a range of observables when we look at all pupils in grade 8, as expected from the randomization process and selection of pupils into the camp (cf. section 2.4). Yet, it appears that schools in *Camp+* more carefully classified pupils in the ERA than schools in the control group: In rounds 1 and 3, we observe from balance tests that the NR-pupils, as well as the pupils selected for the camp are not balanced between *Camp+* and control. Specifically, treatment schools select fewer and more poorly performing pupils for the camp and to be NR in the ERA. Thus, we need to address this selection issue in the econometric models that we use. We turn to this issue in the next section.

4 Analysis

4.1 Estimation strategy

To test the null hypothesis that the camp has no effect on an outcome variable, we estimate the following equation:

$$y_i = \alpha + \delta\, D_i + \gamma\, S_i + \beta\, X_i + \epsilon_i, \tag{1}$$

where y_i is the outcome variable and ϵ_i is the error term. The coefficient of interest δ measures the effect of the treatment captured by dummy D_i, as explained below. S_i is a randomization-stratum fixed effect, and X_i is a vector of covariates. Standard errors are clustered at the school level. We apply the Double-Lasso (DL) variable selection method suggested by Belloni et al. (2014) to select covariates. The DL method is calibrated to not over-select spurious covariates, and Urminsky et al. (2016) concludes that this method is particularly useful for imperfect randomized experiments (and for under-powered analyses in a perfect randomized experiment, by increasing statistical power). It comprises three steps:

[13] Rounds 2 and 3 included four additional, domain-specific risk questions about taking desirable risks (raising your hand or volunteering to present in class) and risky behavior (drinking, smoking, and illegal actions).

1. Predict the dependent variable using a LASSO regression with the complete list of control variables and save the variables with non-zero coefficients.

2. Predict the treatment indicator using a LASSO regression with the complete list of control variables and save the variables with non-zero coefficients. If the treatment is perfectly randomized, then no covariates should be selected in this step.

3. Combine the covariates selected in the first two steps and include them in equation (1).

In the LASSO regressions, we apply 10-fold cross-validation to estimate the optimal shrinkage parameter.

4.2 Analysis groups

To address the aforementioned imbalances, we report results for different sets of pupils as explained in the following.

***Camp+* vs. Control.** If we look at all grade 8 pupils, by design randomization should be perfect, which is confirmed by the aforementioned balance tests for rounds 1 and 3 where schools were randomized into *Camp+* or control. In our main specification, we therefore include all pupils who were in a treatment or control school in grade 8 (henceforth ITT group for Intention To Treat). We set D_i equal to one if in grade 8 a pupil was in a school that was selected for treatment and zero if she/he was in a control school. Thus, the estimate $\hat{\delta}$ corresponds to the ITT effect. That is, it measures the effect of the school being assigned to the treatment, but not necessarily of being treated.

The intention to treat estimate of the main specification likely constitutes an extreme lower bound on the true effect. We therefore also report two additional estimates relying on different groups of pupils. While these estimates help gauge the true effect size, they have to be interpreted with caution because schools carried out the ERA and selected pupils for the camp after learning their treatment status, as explained in section 2.4. This leads to some imbalances, as documented in table S.2.

The first additional estimate is the intention to treat estimate based only on the sample of pupils evaluated NR in grade 8, to which we refer as ITT-NR (Intention To Treat on the NR-pupils) in the following. The ITT-NR group is a subset of the ITT group.

With the second additional estimate, we estimate the effect of the camp on the pupils who actually participated in the camp with the local average treatment effect (LATE, Imbens and Angrist, 1994) for the ITT-NR group. An underlying assumption of the LATE estimate is that there are no spillover effects on non-treated pupils. Thus, if the schools use the teaching material beyond the camp, we risk having the LATE effect overestimating the effect of the camp. Thus, the LATE estimate likely constitutes an upper bound for the true effect.

***Camp+* vs. *Camp*.** In round 2, both groups receive an intervention and by design randomization should be perfect. Indeed, we observe balance between the two groups (cf. table S.3 in the online supplement). We therefore restrict the sample to only those pupils who actually were selected for the camp in grade 8. The estimate $\hat{\delta}$ thus corresponds to the average treatment effect on the treated (ATT) of *Camp+* versus *Camp*. The ATT group is a subset of the ITT-NR group.

4.3 Short-run effects on academic outcomes

We first test for the short-run effects of *Camp+* vs control using the national tests in math and Danish conducted in grade 8. We report the results in tables 2 and 3. Our preferred specifications include covariates, since we observe some imbalances despite the randomization, especially for the ITT-NR group (cf. section 4.2). But we also report specifications without covariates.

Table 2: Short-run effects on the national grade 8 test in Danish, *Camp+* vs. control

	Language Comprehension		Decoding		Text Comprehension		Overall	
ITT	-0.075	-0.033	-0.016	0.017	0.047	0.065***	-0.018	0.017
	(0.052)	(0.043)	(0.037)	(0.024)	(0.035)	(0.021)	(0.041)	(0.028)
Mean outcome, Control	.024	.024	.000	.000	-.057	-.057	-.013	-.013
R-squared	.015	.186	.009	.510	.011	.520	.013	.549
Observations	8,953	8,953	8,953	8,953	8,953	8,953	8,953	8,953
ITT-NR	-0.113**	-0.046	-0.059	0.014	0.055	0.090***	-0.048	0.024
	(0.052)	(0.045)	(0.038)	(0.028)	(0.035)	(0.029)	(0.042)	(0.033)
LATE	-0.231**	-0.094	-0.121	0.028	0.113	0.184***	-0.098	0.050
	(0.107)	(0.092)	(0.078)	(0.058)	(0.073)	(0.059)	(0.087)	(0.067)
Mean outcome, Control	-.233	-.233	-.459	-.459	-.574	-.574	-.519	-.519
R-squared	.024	.213	.009	.431	.013	.342	.014	.442
Observations	3,418	3,418	3,418	3,418	3,418	3,418	3,418	3,418
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes	No	Yes	No	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table 3: Short-run effects on the national grade 8 test in math, *Camp+* vs. control

	Numbers and Algebra		Geometry		Statistics and Probability		Overall	
ITT	0.025	0.068**	0.000	0.043	0.023	0.063	0.017	0.059*
	(0.060)	(0.032)	(0.063)	(0.035)	(0.065)	(0.039)	(0.065)	(0.034)
Mean outcome, Control	-.064	-.064	-.042	-.042	-.033	-.033	-.050	-.050
R-squared	.018	.640	.020	.607	.019	.601	.021	.706
Observations	4,283	4,283	4,283	4,283	4,283	4,283	4,283	4,283
ITT-NR	0.004	0.094**	-0.001	0.091*	0.017	0.117*	0.007	0.100**
	(0.051)	(0.047)	(0.051)	(0.046)	(0.069)	(0.062)	(0.057)	(0.050)
LATE	0.008	0.192**	-0.002	0.185*	0.035	0.240*	0.015	0.204**
	(0.104)	(0.096)	(0.103)	(0.093)	(0.141)	(0.128)	(0.116)	(0.102)
Mean outcome, Control	-.645	-.645	-.625	-.625	-.619	-.619	-.678	-.678
R-squared	.010	.452	.011	.452	.012	.460	.011	.550
Observations	1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes	No	Yes	No	Yes

*Notes:***p<0.01; **p<0.05; *p<0.1. Outcome for math only exists for round 3. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

National test in Danish. For all estimates (ITT, ITT-NR, and LATE) we find positive and significant effects of *Camp+* on one of the primary outcomes, *text comprehension*. The effect sizes range from 0.06-0.18, with the LATE estimate being more than twice as large as the ITT estimate. Yet, contrary to our expectations we do not find a positive effect on *language comprehension* – our main estimate, the ITT estimate, shows an insignificant negative effect. Given these inconclusive results and given that we perform multiple tests (cf. section 5), some caution should be taken in interpreting the positive effect on *text comprehension*.

Further, we do not find an effect on the secondary outcome variable *decoding*. If we aggregate the three outcomes (for comparison with longer term outcomes from grade 9 exams), there is no significant effect on the overall performance.

National test in math. This test was introduced in 2018 and is therefore not available for round 1. With our sample restricted to round 3, for all estimates, we find evidence for positive effects of *Camp+* on the primary outcome *numbers and algebra*. Effect sizes range from 0.07-0.20, with the LATE estimate being almost three times as large as the ITT estimate.

The main estimate (ITT) does not show significant effects of the treatment on the secondary outcome variables, i.e., areas in math that were not targeted in the camp. Yet, for the ITT-NR and LATE estimates, we find some suggestive evidence for positive effects on *geometry* (effect sizes 0.09-0.18) and *statistics and probability* (effect sizes 0.12-0.24). If we aggregate the three areas, there is a positive effect on the overall performance (effect sizes 0.06-0.20). If we compare these effect sizes to the mean outcome in the control group, it is evident that the intervention closes between 10-30% of the gap in math ability that these pupils have accumulated during their time in school.

***Camp+* vs. *Camp*.** We report the results of *Camp+* vs. *Camp* on the short-run academic outcomes in tables S.4 and S.5 in the online supplement. We do not find any significant differences here between the two variants of the camp. We will return to these results when we discuss the impact of *Camp+* on non-cognitive skills in section 4.5.

4.4 Long-run effects on academic outcomes

To measure the long-run effects of *Camp+* vs. the control, we consider the final exam grades in grade 9 and whether pupils enrolled in any post-compulsory education 2.5 years after the camp, reported in table 4. Note that these outcomes are not available for round 3 (cf. table 1).

Final exams in Danish and math. We do not find a significant effect of *Camp+* on the final exams in Danish. We find weak suggestive evidence that the short-run effect of *Camp+* in math translates into a positive long-run effect on the performance in the math final tests in grade 9. Effect sizes for the ITT-NR and LATE range from 0.06-0.18, but neither are they significant at the 5% level, nor does the ITT estimate show a significant effect. Additional analyses suggest that the effect may stem from the better performance in the written part of the math exams (cf. table S.6 in the online supplement).[14]

Post-compulsory education. There is some weak suggestive evidence that *Camp+* has positive effects on pupils being enrolled in education 2.5 years after the camp. While our main estimate, the ITT, is not significant and also very close to zero, according to the ITT-NR estimate, NR-pupils in a school that offered the camp are more likely to be enrolled in some post-compulsory education than NR-pupils in control group schools. The effect sizes for the

[14] All pupils take the written tests. Oral examination is only in math or another science subject, depending on a random draw.

Table 4: Long-run effects of *Camp+* vs control on grade 9 exams and on the fraction not enrolled in education 2.5 years after the camp

	Danish score		Math score		No education	
ITT	-0.055	-0.020	0.023	0.062	0.002	-0.004
	(0.053)	(0.034)	(0.061)	(0.048)	(0.012)	(0.009)
Mean outcome, Control	-.055	-.055	-.101	-.101	.095	.095
R-squared	.014	.684	.016	.660	.005	.152
Observations	4,761	4,761	4,744	4,744	4,820	4,820
ITT-NR	-0.042	-0.005	0.026	0.088*	-0.027	-0.037**
	(0.052)	(0.041)	(0.058)	(0.050)	(0.021)	(0.018)
LATE	-0.086	-0.011	0.053	0.180*	-0.055	-0.076**
	(0.106)	(0.085)	(0.118)	(0.103)	(0.043)	(0.038)
Mean outcome, Control	-.754	-.754	-.779	-.779	.193	.193
R-squared	.017	.520	.013	.477	.012	.163
Observations	1,880	1,880	1,864	1,864	1,931	1,931
Strata	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes	No	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. Outcome only exists for round 1. Educational enrollment is measured September* 31^{th} *three years after the camp. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

ITT-NR and LATE estimates are 0.04-0.07 percentage points. Additional analyses suggest that the effect may stem from treated pupils being more likely to take-up vocational training (cf. table S.7 in the online supplement).

***Camp+* vs. *Camp*.** We report the long-run effects of *Camp+* vs. *Camp* in table S.8 in the online supplement. As for the short-run academic outcomes, we find no significant differences between the two camp variants in the long-run exam grades or on the fraction enrolled in post-compulsory education.

4.5 Effects on non-cognitive skills

Overall, we find no evidence of an effect of *Camp+* vs. the control on non-cognitive skills as measured by the ERA and the psychological scales in the post-survey (see tables S. 2, S.9b, and S.10 in the online supplement).[15]

Further, comparing non-cognitive skills between *Camp+* (which included around 16 hours of teaching on non-cognitive skills and revisiting them during the 8-week follow-up program) and *Camp* (which does not teach about non-cognitive skills), we find an inconsistent picture. Given that we did not classify any outcome measure as primary or secondary, we do not draw a conclusion in one or the other direction from this inconsistent picture, but only summarize the effects in the next paragraph.

There is a tendency that pupils who participated in *Camp+* are more likely to be assessed NR-pupils compared to *Camp*, which shows specifically in a worse evaluation of the personal skills (see tables S.14 and S.15 in the online supplement).[16] Further, we do not find any difference in most of the non-cognitive skills targeted in *Camp+* (self-control, grit, and mindsets). Both the negative and the null result are against what we expected ex-ante. Yet, the 1-item question by Vischer et al. (2013) indicates an increase in patience relative to *Camp* (see table S.17a and S.17b in the appendix). *Camp+* also is associated with pupils being more likely to take risks – both positive risks (like saying something in class) and negative risks (like drinking alcohol or smoking).

While these measures of non-cognitive skills show an inconsistent picture, the comparison of academic skills discussed in the previous section also show no difference between *Camp* versus *Camp+*. On the one hand, *Camp* devotes more time to training in math and Danish. But on the other hand, if *Camp+* had a strong positive impact on non-cognitive skills and if these non-cognitive skills impacted academic performance, then pupils who participated in *Camp+* rather than *Camp* should perform better in school – at least in academic areas that were not directly targeted in the camp. Thus, taking all these results together suggests the interpretation that the time spent on non-cognitive skills in *Camp+* does not affect non-cognitive skills.

4.6 Exploratory analysis: subgroups

While our study is not strictly powered to encompass subgroup analyses, it might nevertheless be enlightening to report some exploratory results. Of course, given their exploratory nature, they should be interpreted with some caution. We focus here on the effects of *Camp+* vs. control in the national tests. The results are summarized in tables S.18-S.25 in the online

[15] In the online supplement, in tables S.11 and S.12, we further split-up the results of the ERA into the evaluation of the personal and social skills of pupil. No effects are found either. The ERA evaluates whether pupils are assessed to be ready for their preferred post-secondary educations. Table S.13 in the online supplement rules out that the treatment affects what educations pupils prefer.

[16] The preferred education of the pupils is not affected by the treatments, as shown in table S.16 in the online supplement.

supplement and include also comparison of *Camp+* vs. *Camp*.

Gender. As many education interventions have a stronger effect on girls than on boys, a natural question is whether the effects of the camp vary by gender. When we look at the national test in Danish, we observe for boys a positive effect on *text comprehension* (effect sizes 0.08-0.17). For girls, we do not see a corresponding ITT effect.[17] In contrast, for the national test in math, we observe for girls a positive effect on *probability and statistics* (effect sizes 0.09-0.35), as well as a positive ITT effect on *numbers and algebra* (effect size 0.09). These results suggest that the camp specifically pushes pupils in areas where according to gender-stereotypical beliefs they would expect not to do well.

Socioeconomic background. We use the education level of the mother as an indicator for the socioeconomic background of the pupil. Specifically, we classify pupils as having a low-socioeconomic background if their mothers have 12 years of education or less (i.e., they have at most completed high school). In the national tests in Danish, in the area of *text comprehension* we observe a positive significant treatment impact on pupils with low-socioeconomic background (effect sizes range from 0.14-0.28). Yet, in the national tests in math, we do not observe a positive ITT effect in the targeted area.[18]

Academic low performers. When we look at the worst performing pupils according to the previous national test in grade 6 (lowest 10% of all grade 8 pupils), we observe positive significant effects on *text comprehension* (effect sizes 0.09-0.20). Further, the camp has positive effects in math not only on the targeted area of *numbers and algebra* (effect sizes 0.12-0.25), but also on the non-targeted area *geometry* (effect sizes 0.14-0.28).[19] The effect sizes suggest that the treatment has a larger impact on the worst pupils compared to all pupils.

5 Discussion

5.1 Multiple hypotheses

We have reported a fairly large number of results for each treatment variant, even when limiting ourselves to the primary outcome variables. Thus, some of them might be significant due to statistical chance. We have tried to accommodate this problem by highlighting primarily results where all estimates point in the same direction. But of course, we should further caution against interpreting results too strictly, especially when looking at subgroups and at secondary outcome variables.

[17] There is some evidence of an effect from the ITT-NR and LATE estimates (effect sizes 0.10-0.21).

[18] There are some positive results for the ITT-NR and LATE estimates in the non-targeted area.

[19] There is even suggestive evidence for positive effects on the non-targeted area *probability and statistics* (0.15-0.31).

5.2 Economic significance

Overall, we find effect sizes of below 0.24 for the short-run academic outcomes. While these are small, they are in line with the effect sizes identified in the previous literature on remedial education programs (see the literature review in section 1) and comparable to the effect on math scores of increasing teacher quality in a term by one standard deviation, where effect sizes are around 0.11-0.13 (Aaronson et al., 2007; Rivkin et al., 2005). They are also in line with the effect sizes found in other interventions in Danish primary schools conducted in earlier grades, such as mother tongue teaching (Andersen and Knoth Humlum, 2020) and the 'two-teacher in the classroom' program (Andersen et al., 2020). The former estimates, in the Danish national tests, an effect of 0.15 of a standard deviation for language comprehension and 0.17 for decoding. The latter study reports effects on grades in Danish by 0.06-0.10 of a standard deviation.

The effect sizes should also be seen in light of the short duration of the camp (two weeks + 8 weeks of follow-up) and its relatively low costs. The main costs of the camps stem from the one-time development of the teaching materials. Running the camp itself costs approximately DKK 5000 ($750) per pupil. Further, in contrast to, for example, summer camps, the camp is not in addition to the regular teaching, but substitutes for it. That is, while the pupils receive more intensive teaching in math and Danish than usual, they miss out on their regular classes. Any effect thus indicates that the camp is more effective than regular classes.

5.3 Results on social and personal skills

Contrary to our a priori expectations, *Camp+* has no effect on the non-cognitive skills of the pupils. These results are in contrast to the closely related studies by Alan and Ertac (2018) and Alan et al. (2019), who find large and persistent effects of their intervention on non-cognitive and academic skills.

There might be several reasons behind these different findings. One reason could lie in the composition of pupils and/or schools. Our pupils are older than the ones in the studies of Alan and Ertac (2018) and Alan et al. (2019), and it may be more difficult to change the non-cognitive skills of older pupils (cf. Kautz et al., 2014).

Further, our teaching material on non-cognitive skills do not focus on one particular non-cognitive skill (like grit or mindset), but cover a range of non-cognitive skills. The rationale for our approach stems from the evaluations that schools carry out in grade 8 (ERE), where both personal and social skills are evaluated in addition to academic skills. However, we do have some focus topics, such as self-regulation strategies and mindsets. Yet, the total hours on a particular focus topic (3-5 hours) is still less than the total number of hours spent on the specific topics in the intervention studied by Alan and Ertac (2018) and Alan et al. (2019). Their respective interventions focused on one specific topic at a time and used around 2 hours per week for 8-12 weeks. Thus, one reason for us not finding large effects on academic skills

and essentially zero effects on non-cognitive skills could be that focusing on many topics is less effective than focusing on one topic.

Lastly, in Denmark, a lot of interventions take place in school (see subsection 5.2 and 5.5.2 for some examples), and there is generally a culture of implementing new teaching and learning concepts. In contrast, Alan et al. (2019) state that their program took place in under-resourced public schools in Turkey which are mainly attended by pupils from low-socioeconomic backgrounds. Denmark also scores higher in the PISA 2018 tests than Turkey (Schleicher, 2018). Thus, the small effects on academic skills and null results on non-cognitive skills that we find, in comparison to the large effects of Alan and Ertac (2018) and Alan et al. (2019), might be due to the fact that they stem from a setting with lower educational resources and fewer alternatives to the intervention than in our setting.

Thus, overall, caution should be taken in generalizing from our results to conclusions such as "non-cognitive skills cannot be changed in older children and thus the main focus should be on training academic skills". Our results are specific to, for example, the used teaching materials or to country specific characteristics. Future research may examine in more detail the role of age when trying to impact non-cognitive skills.

5.4 Organization of the camp

Our camp takes place during regular teaching hours in the school of the pupils. This form has some advantages over traditional summer camps. First, a school-based camp may remove potential barriers to participation. No special search effort or application is needed in order to participate in the camp. Further, the camp does not take away leisure time as the pupil has to attend school otherwise. Finally, the pupil knows the teachers, other participants and the location – decreasing potential psychological barriers. Second, a school-based camp permits to follow-up on the outcomes of the learning camp during the regular teaching. Either a teacher of the pupil or a close colleague (i.e., a teacher teaching the same cohort of pupils) is involved in the teaching of the camp. Colleagues within a school can easily exchange information and discuss how to follow-up on the outcomes of the camp.

Yet, as the camp takes places during regular teaching hours, pupils miss-out on the regular teaching. This might be less of a problem for Danish and math, where pupils receive more intensive training than normal. Yet, it might be a problem for other subjects (like natural sciences or foreign languages) that are not targeted in the camp. That is, while the camp, on the one hand, gives pupils something (more math and Danish lessons) it also takes away something from them (lessons in other subjects).

5.5 Caveats

5.5.1 Non-adherence in the control group

Of the 36 control schools in round 3, 12 had participated in the camp either in round 1 or 2. This creates scope for control schools in round 3 to use the teaching materials from either *Camp+* or *Camp*. In addition, some schools indicated beforehand that they planned to conduct a camp themselves should they not be selected as a treatment school. Thus, in round 3 the management of all schools was asked to sign a legally binding statement declaring whether or not they conducted in grade 8 a camp using our teaching materials. Four control schools indicated that they did use the materials from either *Camp+* or *Camp*. We take this into account in the calculation of the LATE estimate. Yet, for the ITT estimates, these schools will continue to be included in the analyses as control schools, supporting the point that the ITT is a conservative estimate of the true effect of the camp.

5.5.2 Treatment as usual

Control schools may provide other educational support for NR-pupils. In particular, if a pupil is assessed NR, the school is required by law to offer additional support. This could, for example, consist of enrolling the pupil in a camp that is offered by the relevant municipality (see the next paragraph), providing individual supervision, or offering activities outside the school. For this reason, we have to assume that all NR-pupils receive some kind of treatment, which probably also affects outcomes. In the statements from school management collected in round 3, we further asked whether the school implemented some type of camp in grade 8 (not using our teaching material). About half of the control schools indicated that they completed some type of camp themselves.

Further, there exist many opportunities for attending intensive learning camps in Denmark. Examples are a summer camp for boys in grade 8 ("Drengeakademiet" supported by Løkkefonden, cf. Andersen and Nissen, 2014; Andersen, 2015) or the camp "Plan T", which targets children in a specific municipality who are dyslexic. In addition, many municipalities offer similar types of intensive learning camps for grade 8 and 9 pupils with academic or social problems (e.g., the 1-week "MOVE" camp in the city of Aarhus).

We treat participation in all such intensive learning camps and initiatives as "treatment as usual". Yet, the presence of such camps and related initiatives implies that we are intervening at a high level of existing support for the NR-pupils. The small effects hence may be due to the fact that the "treatment as usual" has almost as much effect as the camp. Indeed, this might be an explanation for the effect sizes being larger in other countries.

6 Conclusion

Using a large randomized trial, we evaluate an intensive learning camp for grade 8 pupils that are assessed 'not ready' for further education. The main variant of the camp does not only train pupils in math and Danish, but also aims to strengthen their non-cognitive skills. In the short-run, we find small positive effects on targeted-areas in math and some weak evidence for positive effects in Danish, but no evidence on long-run effects. We do not find any evidence that the camp impacts non-cognitive skills.

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Online supplement for
An intensive, school-based learning camp targeting academic and non-cognitive skills evaluated in a randomized trial

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S. 1 Survey measures for non-cognitive skills

In our analysis, we draw on the following measures collected in the post-camp survey. We provide the English translations of the questions that were posed in Danish.

- **Grit: Grit Scale** (Duckworth and Quinn, 2009)

  1 = Strongly agree, 2 = Agree, 3 = Neither agree nor disagree, 4 = Disagree, 5 = Strongly disagree

  1. New ideas and projects sometimes distract me from previous ones.
  2. Setbacks don't discourage me.(R)
  3. I have been obsessed with a certain idea or project for a short time but later lost interest.
  4. I am a hard worker.(R)
  5. I often set a goal but later choose to pursue a different one.
  6. I have difficulty maintaining my focus on projects that take more than a few months to complete.
  7. I finish whatever I begin.(R)
  8. I am diligent.

- **Self-control: Domain-Specific Impulsivity Scale for Children (Tsukayama et al., 2013)**

  1 = At least once a day; 2 = Approx. once a week, 3 = Approx. 2-3 times a month, 4 = Approx. once a month, 5 = Almost never

  1. I forgot something I needed for school.
  2. I interrupted other pupils while they were talking.
  3. I said something rude.
  4. I couldn't find something because my table, closet, or bedroom was messy.
  5. I got really mad at home or at school.
  6. I couldn't remember what my teacher had asked me to do.
  7. I thought of something else while I should have listened.
  8. I talked back to my teacher or parent because I was angry or upset.

- **Self-concept: Core Self-Evaluations Scale** (Judge et al., 2003)

  1 = Strongly agree, 2 = Agree, 3 = Neither agree nor disagree, 4 = Disagree, 5 = Strongly disagree

1. I am confident I get the success I deserve in life.(R)
2. Sometimes I feel depressed.
3. When I try, I generally succeed.(R)
4. Sometimes when I fail I feel worthless.
5. I complete tasks successfully.(R)
6. Sometimes, I do not feel in control of my work.
7. Overall, I am satisfied with myself.(R)
8. I am filled with doubts about my competence.
9. I determine what will happen in my life.(R)
10. I do not feel in control of my success in school.
11. I am capable of coping with most of my problems.(R)
12. There are times when things look pretty bleak and hopeless to me.

- **SDQ: Strengths and Difficulties Questionnaire for adolescents** (Goodman et al., 1998)

  1=Not true, 2=Somewhat true, 3=Certainly true

1. I am restless, I cannot stay still for long.
2. I get a lot of headaches, stomach-aches or sickness.
3. I get very angry and often lose my temper.
4. I would rather be alone than with people of my age.
5. I usually do as I am told.(R)
6. I worry a lot.
7. I am constantly fidgeting or squirming.
8. I have one good friend or more.(R)
9. I fight a lot. I can make other people do what I want.
10. I am often unhappy, depressed or tearful.
11. Other people my age generally like me.(R)
12. I am easily distracted, I find it difficult to concentrate.
13. I am nervous in new situations. I easily lose confidence.
14. I am often accused of lying or cheating.
15. Other children or young people pick on me or bully me.
16. I think before I do things.(R)
17. I take things that are not mine from home, school or elsewhere.

18. I get along better with adults than with people my own age.
19. I have many fears, I am easily scared.
20. I finish the work I'm doing. My attention is good.(R)

    Prosocial scale (not included in the *Total difficulties score*):

21. I try to be nice to other people. I care about their feelings.
22. I usually share with others, for example CD's, games, food.
23. I am helpful if someone is hurt, upset or feeling ill.
24. I am kind to younger children.
25. I often offer to help others (parents, teachers, children).

- **Mindset: Malleability of ability to learn** (based on Dweck, 2006)

  1 = Strongly agree, 2 = Agree, 3 = Neither agree nor disagree, 4 = Disagree, 5 = Strongly disagree

  1. I can always improve my ability to learn no matter how old I am.(R)
  2. My ability to learn will never change.
  3. I am above the age, where it is possible to significantly improve my ability to learn.
  4. After a certain time during my childhood, I will no longer be able to improve my ability to learn.

- **Patience 1: 2 items from the GSOEP**

  1 = Strongly agree, 2 = Agree, 3 = Neither agree nor disagree, 4 = Disagree, 5 = Strongly disagree

  1. I do without today to be able to afford more tomorrow.(R)
  2. I prefer to have fun today and don't think about tomorrow.

- **Patience 2: 1-item patience question** (Vischer et al., 2013)

  Likert scale: 1= very impatient, 10= very patient

  Are you generally an impatient person, or someone who always shows great patience?

- **General risk preferences** (Dohmen et al., 2011)

  Likert scale: 1=not at all willing to take risks, 10=very willing to take risks

  Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?

- **Positive risk preferences**

1 = Several times a day, 2 = Once a day, 3 = Several times a week, 4 = Once a week, 5 = Once a month, 6 = Never

1. How often have you raised your hand in class during the last month?(R)
2. How often have you volunteered to present something in class during the last month?(R)

- **Negative risk preferences**

1 = Several times a day, 2 = Once a day, 3 = Several times a week, 4 = Once a week, 5 = Once a month, 6 = Never

1. How often have you been drinking alcohol and / or smoking cigarettes during the last month?
2. How often have you done something illegal (for example, jaywalked, stole something) during the last month?

S. 2 Additional tables

Table S.1: Balance tests - all pupils in grade 8 (ITT)

	Round 1 and 3				Round 2		
	Camp+	**Control**	**Diff.**		**Camp+**	**Camp**	**Diff.**
Language Comprehension							
- Grade 6	-0.004	0.028	-0.035		0.004	0.025	-0.028
- Grade 4	-0.055	0.012	-0.063		0.038	0.040	-0.004
- Grade 2	-0.001	-0.003	0.014		-0.014	0.007	-0.019
Decoding							
- Grade 6	-0.015	0.032	-0.057		0.020	0.001	0.014
- Grade 4	-0.026	0.018	-0.048		0.002	-0.025	0.026
- Grade 2	-0.009	0.018	-0.018		-0.032	-0.002	-0.022
Text Comprehension							
- Grade 6	-0.034	-0.011	-0.029		0.009	0.001	0.009
- Grade 4	-0.046	-0.007	-0.039		-0.006	-0.015	0.013
- Grade 2	-0.012	0.015	-0.021		-0.039	-0.003	-0.029
Overall Reading							
- Grade 6	-0.020	0.019	-0.047		0.013	0.010	-0.002
- Grade 4	-0.048	0.009	-0.057		0.013	0.000	0.013
- Grade 2	-0.008	0.011	-0.009		-0.032	0.001	-0.027
Numbers and Algebra							
- Grade 6	-0.077	0.033	-0.114	***	0.033	0.017	0.019
- Grade 3	0.004	0.034	-0.027		0.022	-0.004	0.025
Geometry							
- Grade 6	-0.051	0.028	-0.080	**	0.038	0.011	0.033
- Grade 3	-0.007	-0.015	0.012		-0.023	0.021	-0.034
Statistics and Probability							
- Grade 6	-0.042	0.020	-0.067		0.022	0.009	0.024
- Grade 3	0.002	0.017	-0.008		0.003	0.009	-0.003
Overall Math							
- Grade 6	-0.064	0.030	-0.098	**	0.035	0.014	0.029
- Grade 3	0.000	0.014	-0.008		0.001	0.010	-0.004
Educational interest at 8th grade assessment							
- 3-year High School	0.739	0.731	0.007		0.705	0.720	-0.012
- Vocational training	0.526	0.523	-0.000		0.468	0.456	0.014
- 2-year High School	0.229	0.193	0.024		0.102	0.088	0.014
- Other	0.018	0.014	0.004		0.021	0.019	-0.001

Personal ready at 8th grade assessment								
- 3-year High School	0.809	0.793	0.012		0.822	0.794	0.033	
- Vocational training	0.727	0.719	0.010		0.715	0.654	0.062	**
- 2-year High School	0.723	0.698	-0.015		0.717	0.674	0.047	
Social ready at 8th grade assessment								
- 3-year High School	0.863	0.862	0.003		0.882	0.867	0.018	
- Vocational training	0.805	0.804	0.011		0.799	0.765	0.029	
- 2-year High School	0.811	0.804	0.016		0.832	0.781	0.039	
Academic ready at 8th grade assessment								
- 3-year High School	0.587	0.607	-0.023		0.625	0.610	0.020	
- Vocational training	0.753	0.777	-0.027	*	0.786	0.755	0.037	**
- 2-year High School	0.754	0.778	-0.028	*	0.786	0.756	0.037	**
- GPA (std.)	-0.192	-0.168	-0.028		-0.137	-0.159	0.032	
Overall ready at 8th grade assessment								
- 3-year High School	0.655	0.661	-0.010		0.708	0.691	0.022	
- Vocational training	0.585	0.602	-0.017		0.582	0.535	0.049	*
- 2-year High School	0.639	0.637	-0.042		0.591	0.584	0.060	
Personality Traits								
- Grit	-0.002	-0.004	-0.009		0.009	-0.005	0.015	
- Self-control	0.014	-0.007	0.003		0.000	0.005	-0.006	
- Self-concept	0.000	0.011	0.002		0.012	-0.009	0.010	
- Mindset	0.004	0.007	0.003		-0.016	0.020	-0.036	
- General risk preferences	-0.020	0.021	-0.028		-0.009	0.014	-0.027	
- Positive risk preferences	-0.029	0.051	-0.067		0.001	-0.001	0.005	
- Negative risk preferences	0.040	-0.049	0.081		0.036	-0.028	0.065	
- Patience1	0.009	-0.015	0.019		-0.009	0.012	-0.014	
- Patience2	0.004	-0.005	0.005		0.009	-0.006	0.020	
- Self-control awareness	0.029	-0.043	0.055		-0.005	0.003	-0.003	
- Academic self-perception	-0.010	0.014	-0.026		0.033	-0.031	0.054	
- Academic self-concept	-0.014	0.020	-0.039		0.032	-0.027	0.053	
Strengths and Difficulties Questionnaire								
- Prosocial behaviour	-0.003	-0.001	-0.022		0.001	0.001	0.000	
- Emotional symptoms	0.013	-0.021	0.033		-0.007	0.002	0.000	
- Conduct problems	0.000	-0.004	0.025		0.016	-0.023	0.039	
- Hyperactivity/inattention	0.013	-0.014	0.046		-0.008	0.007	-0.016	
- Peer relationship problems	0.013	-0.030	0.055		-0.004	-0.008	0.006	
- Total difficulties score	0.015	-0.025	0.056		-0.003	-0.005	0.006	
Conscientiousness								
- Grade 7	-0.073	-0.026	-0.058	*	-0.001	-0.031	0.025	

- Grade 6	-0.005	0.013	-0.034		0.059	0.069	-0.023	
Agreeableness								
- Grade 7	-0.002	0.000	0.001		0.035	-0.014	0.055	
- Grade 6	0.011	0.055	-0.047	*	0.076	0.023	0.041	
Neuroticism								
- Grade 7	0.036	0.009	0.036		-0.073	0.029	-0.097	**
- Grade 6	-0.014	-0.056	0.054	**	-0.110	-0.069	-0.021	
Academic self-perception								
- Grade 7	-0.134	-0.103	-0.042		-0.108	-0.149	0.042	
- Grade 6	0.004	0.047	-0.067	**	0.044	0.019	0.019	
Academic well-being								
- Grade 7	-0.105	-0.058	-0.056	*	-0.037	-0.080	0.039	
- Grade 6	0.004	0.035	-0.053	*	0.062	0.057	-0.008	
Social well-being								
- Grade 7	-0.031	-0.009	-0.028		0.074	-0.011	0.079	*
- Grade 6	0.032	0.073	-0.056	*	0.122	0.085	0.018	
Order and quietness								
- Grade 7	-0.084	-0.061	-0.034		0.010	0.001	0.005	
- Grade 6	-0.092	-0.047	-0.051		0.023	0.027	-0.022	
Support and inspiration								
- Grade 7	-0.183	-0.217	0.027		-0.124	-0.210	0.078	
- Grade 6	-0.027	-0.033	-0.017		0.061	-0.062	0.107	**
Sick absence								
- Grade 7	3.132	3.518	-0.405	**	3.241	3.448	-0.179	
- Grade 6	3.180	3.126	0.057		3.118	3.231	-0.176	
Illegal absence								
- Grade 7	1.305	1.127	0.189		1.232	1.185	0.007	
- Grade 6	0.763	0.748	-0.002		0.526	0.685	-0.151	
Legal absence								
- Grade 7	1.644	1.501	0.103		1.680	1.618	0.051	
- Grade 6	1.308	1.250	0.053		1.269	1.296	-0.041	
Dyslexic information								
- Dyslexic	0.071	0.062	0.010		0.074	0.081	-0.006	
- Uncertain phonological	0.030	0.029	-0.001		0.025	0.026	-0.001	
- Not dyslexic	0.014	0.014	-0.001		0.012	0.013	-0.001	
- Not tested	0.885	0.895	-0.008		0.889	0.881	0.008	
- NOTA membership	0.092	0.083	0.007		0.095	0.114	-0.020	*
Schooling information								
- School starting age	6.213	6.203	0.009		6.220	6.197	0.016	

- Number of classes retaken	0.067	0.063	0.004		0.059	0.077	-0.011	
- Number of school changes	0.729	0.808	-0.069		0.732	0.740	0.005	
Child diagnosis								
- ADHD	0.013	0.011	0.001		0.003	0.002	0.001	
- Autisme	0.008	0.008	-0.001		0.000	0.001	-0.001	*
- OCD and anxiety	0.021	0.017	0.002		0.007	0.006	0.001	
- Other behavioral disorder	0.017	0.015	0.000		0.011	0.008	0.003	
Place of residence								
- Living with both parents	0.637	0.639	-0.003		0.629	0.636	-0.004	
- Living with one parents	0.351	0.349	0.002		0.360	0.352	0.005	
- Living with no parents	0.013	0.012	0.001		0.011	0.012	-0.002	
Etnicity								
- Danish	0.892	0.893	0.004		0.904	0.907	-0.003	
- Non-western	0.091	0.091	-0.003		0.080	0.077	0.002	
- Western	0.017	0.017	-0.000		0.016	0.015	0.001	
Age at birth								
- Mother	29.698	29.806	-0.114		29.784	30.059	-0.310	*
- Father	32.541	32.422	0.099		32.580	32.763	-0.222	
Income (1,000DKK)								
- Mother	278.126	290.945	-13.424	*	286.255	296.473	-10.506	
- Father	379.541	410.002	-31.230	***	400.040	407.164	-5.454	
Etnicity - Mother								
- Danish	0.863	0.851	0.017		0.873	0.878	-0.004	
- Non-western	0.109	0.117	-0.013		0.097	0.096	-0.000	
- Western	0.028	0.032	-0.003		0.030	0.025	0.004	
Etnicity - Father								
- Danish	0.872	0.864	0.011		0.881	0.890	-0.007	
- Non-western	0.101	0.107	-0.010		0.091	0.084	0.005	
- Western	0.028	0.029	-0.001		0.028	0.026	0.002	
Employment status - Mother								
- No benefits	0.721	0.750	-0.028	**	0.754	0.759	-0.004	
- ALMP	0.158	0.146	0.012		0.139	0.142	-0.004	
- SU	0.025	0.021	0.003		0.017	0.024	-0.007	*
- Pension/leave	0.096	0.083	0.013	**	0.090	0.075	0.015	*
Employment status - Father								
- No benefits	0.813	0.829	-0.015		0.825	0.823	0.005	
- ALMP	0.091	0.088	0.003		0.083	0.080	0.002	
- SU	0.005	0.006	-0.001		0.004	0.005	-0.002	
- Pension/leave	0.091	0.076	0.013	*	0.089	0.092	-0.005	

Education - Mother								
- No education	0.006	0.007	-0.002		0.005	0.010	-0.006	***
- Primary School	0.160	0.151	0.011		0.140	0.153	-0.011	
- High School	0.057	0.053	0.002		0.052	0.060	-0.006	
- Voccational	0.405	0.402	0.008		0.416	0.399	0.014	
- Short University Degree	0.059	0.053	0.002		0.048	0.047	0.001	
- Medium University Degree	0.258	0.253	0.004		0.269	0.259	0.013	
- Long University Degree	0.055	0.080	-0.026	**	0.069	0.073	-0.005	
Education - Father								
- No education	0.014	0.013	0.001		0.006	0.012	-0.006	**
- Primary School	0.202	0.188	0.013		0.191	0.199	-0.008	
- High School	0.037	0.043	-0.007	*	0.039	0.046	-0.008	
- Voccational	0.499	0.471	0.033	**	0.493	0.451	0.043	**
- Short University Degree	0.072	0.079	-0.009		0.084	0.079	0.005	
- Medium University Degree	0.107	0.116	-0.009		0.115	0.121	-0.005	
- Long University Degree	0.068	0.090	-0.022	**	0.072	0.093	-0.020	
Observations	4,573	4,851	9,424		3,144	2,991	6,135	

*Note: ***p<0.01; **p<0.05; *p<0.1. Column 1-2 and 4-5 report the mean for each treatment group. Column 3 and 6 report the difference between the two treatment groups by regressing each baseline covariate on the treatment indicator, including randomization strata fixed effect and clustering at the school level. Baseline data are obtained from register data collected before the beginning of the intervention. Pupils are allowed to have more than one educational interest at the 8th grade risk assessment. They are only evaluated on personal, social and overall educational readiness for educations in which they indicate interest. The table is based on non-missing data.*

Table S.2: Balance tests - all NR pupils in grade 8 (ITT-NR)

	Round 1 and 3				Round 2			
	Camp+	**Control**	**Diff.**		**Camp+**	**Camp**	**Diff.**	
Language Comprehension								
- Grade 6	-0.406	-0.335	-0.086		-0.404	-0.375	-0.033	
- Grade 4	-0.438	-0.352	-0.089	*	-0.366	-0.342	-0.015	
- Grade 2	-0.322	-0.309	-0.008		-0.345	-0.299	-0.054	
Decoding								
- Grade 6	-0.482	-0.393	-0.098	**	-0.444	-0.459	0.002	
- Grade 4	-0.469	-0.387	-0.080	**	-0.415	-0.469	0.047	
- Grade 2	-0.439	-0.412	-0.024		-0.487	-0.432	-0.064	
Text Comprehension								
- Grade 6	-0.514	-0.493	-0.039		-0.492	-0.531	0.029	
- Grade 4	-0.484	-0.481	-0.006		-0.458	-0.491	0.030	
- Grade 2	-0.435	-0.407	-0.018		-0.488	-0.436	-0.062	
Overall Reading								
- Grade 6	-0.544	-0.473	-0.087	*	-0.518	-0.528	-0.001	
- Grade 4	-0.526	-0.461	-0.066		-0.471	-0.496	0.024	
- Grade 2	-0.455	-0.429	-0.019		-0.505	-0.446	-0.069	
Numbers and Algebra								
- Grade 6	-0.532	-0.407	-0.131	***	-0.386	-0.445	0.061	
- Grade 3	-0.399	-0.322	-0.076	*	-0.344	-0.410	0.055	
Geometry								
- Grade 6	-0.474	-0.397	-0.086	**	-0.408	-0.489	0.085	*
- Grade 3	-0.390	-0.357	-0.025		-0.373	-0.369	0.002	
Statistics and Probability								
- Grade 6	-0.512	-0.439	-0.083	**	-0.423	-0.496	0.077	
- Grade 3	-0.445	-0.373	-0.066		-0.384	-0.430	0.033	
Overall Math								
- Grade 6	-0.569	-0.466	-0.113	***	-0.455	-0.534	0.083	*
- Grade 3	-0.464	-0.396	-0.063		-0.413	-0.453	0.034	
Educational interest at 8th grade assessment								
- 3-year High School	0.627	0.627	0.004		0.551	0.573	-0.014	
- Vocational training	0.636	0.640	-0.005		0.606	0.602	0.009	
- 2-year High School	0.266	0.229	0.040		0.131	0.107	0.019	
- Other	0.045	0.036	0.011		0.057	0.050	-0.000	
Personal ready at 8th grade assessment								

- 3-year High School	0.444	0.390	0.042		0.393	0.334	0.071	*
- Vocational training	0.439	0.420	0.016		0.412	0.325	0.084	**
- 2-year High School	0.391	0.347	-0.011		0.354	0.276	0.056	
Social ready at 8th grade assessment								
- 3-year High School	0.602	0.594	0.011		0.597	0.570	0.021	
- Vocational training	0.601	0.596	0.022		0.586	0.542	0.029	
- 2-year High School	0.584	0.577	0.040		0.616	0.514	0.054	
Academic ready at 8th grade assessment								
- 3-year High School	0.085	0.108	-0.031	**	0.120	0.096	0.019	
- Vocational training	0.382	0.428	-0.051	**	0.420	0.366	0.062	**
- 2-year High School	0.383	0.430	-0.052	**	0.421	0.367	0.061	**
- GPA (std.)	-1.062	-1.008	-0.061	**	-1.037	-1.100	0.068	
Overall ready at 8th grade assessment								
- 3-year High School	0.000	0.000	0.000		0.002	0.000	0.002	
- Vocational training	0.153	0.178	-0.024		0.138	0.093	0.041	*
- 2-year High School	0.200	0.211	-0.062		0.149	0.121	0.022	
Personality Traits								
- Grit	-0.411	-0.364	-0.061		-0.428	-0.445	0.009	
- Self-control	-0.161	-0.201	0.034		-0.237	-0.217	-0.041	
- Self-concept	-0.003	0.010	0.028		-0.283	-0.330	0.038	
- Mindset	0.001	0.005	0.002		-0.278	-0.220	-0.044	
- General risk preferences	-0.023	0.070	-0.095	**	-0.012	0.009	-0.024	
- Positive risk preferences	-0.450	-0.298	-0.146	**	-0.385	-0.373	-0.005	
- Negative risk preferences	-0.131	-0.290	0.149	*	-0.183	-0.264	0.073	
- Patience1	-0.006	-0.020	0.016		-0.175	-0.172	0.007	
- Patience2	-0.085	-0.148	0.084		-0.135	-0.169	0.036	
- Self-control awareness	0.233	0.145	0.069		0.197	0.202	0.009	
- Academic self-perception	-0.320	-0.347	0.047		-0.349	-0.409	0.035	
- Academic self-concept	-0.527	-0.545	0.035		-0.521	-0.605	0.071	
Strengths and Difficulties Questionnaire								
- Prosocial behaviour	-0.151	-0.225	0.031		-0.188	-0.164	-0.013	
- Emotional symptoms	0.104	0.115	-0.023		0.077	0.096	-0.007	
- Conduct problems	0.363	0.366	0.016		0.355	0.337	0.022	
- Hyperactivity/inattention	0.338	0.372	-0.044		0.361	0.391	-0.033	
- Peer relationship problems	0.318	0.238	0.096		0.294	0.259	0.043	
- Total difficulties score	0.381	0.377	0.006		0.365	0.370	0.001	
Conscientiousness								
- Grade 7	-0.442	-0.365	-0.087	**	-0.380	-0.435	0.046	
- Grade 6	-0.333	-0.344	-0.006		-0.285	-0.308	-0.004	

Agreeableness							
- Grade 7	-0.215	-0.243	0.034		-0.220	-0.299	0.086	*
- Grade 6	-0.169	-0.122	-0.044		-0.164	-0.251	0.081	*
Neuroticism							
- Grade 7	0.131	0.147	0.004		0.088	0.227	-0.135	**
- Grade 6	0.139	0.096	0.057		0.055	0.110	-0.033	
Academic self-perception							
- Grade 7	-0.550	-0.530	-0.040		-0.539	-0.573	0.016	
- Grade 6	-0.327	-0.308	-0.048		-0.328	-0.333	-0.008	
Academic well-being							
- Grade 7	-0.537	-0.483	-0.066		-0.497	-0.544	0.033	
- Grade 6	-0.377	-0.370	-0.031		-0.348	-0.366	-0.004	
Social well-being							
- Grade 7	-0.140	-0.191	0.036		-0.110	-0.233	0.120	**
- Grade 6	-0.120	-0.109	-0.034		-0.076	-0.120	0.027	
Order and quietness							
- Grade 7	-0.191	-0.190	-0.005		-0.114	-0.147	0.028	
- Grade 6	-0.163	-0.201	0.039		-0.078	-0.106	0.005	
Support and inspiration							
- Grade 7	-0.300	-0.386	0.077		-0.334	-0.383	0.037	
- Grade 6	-0.137	-0.184	0.041		-0.085	-0.201	0.097	
Sick absence							
- Grade 7	3.924	4.386	-0.476	*	4.178	4.402	-0.178	
- Grade 6	4.026	3.869	0.181		4.239	4.256	-0.076	
Illegal absence							
- Grade 7	2.260	1.845	0.373		2.193	2.071	0.054	
- Grade 6	1.281	1.170	0.051		0.963	1.178	-0.180	
Legal absence							
- Grade 7	1.826	1.648	0.114		1.834	1.729	0.071	
- Grade 6	1.398	1.309	0.094		1.495	1.315	0.137	
Dyslexic information							
- Dyslexic	0.133	0.106	0.028	**	0.133	0.144	-0.008	
- Uncertain phonological	0.048	0.045	0.000		0.034	0.046	-0.009	
- Not dyslexic	0.023	0.023	-0.001		0.020	0.025	-0.004	
- Not tested	0.796	0.826	-0.028		0.813	0.786	0.022	
- NOTA membership	0.167	0.141	0.022		0.171	0.205	-0.037	*
Schooling information							
- School starting age	6.250	6.253	-0.003		6.271	6.245	0.018	
- Number of classes retaken	0.113	0.101	0.004		0.112	0.116	-0.001	

- Number of school changes	0.902	0.965	-0.053		0.903	0.951	-0.009	
Child diagnosis								
- ADHD	0.023	0.022	-0.002		0.003	0.004	-0.001	
- Autisme	0.014	0.013	-0.001		0.000	0.001	-0.001	
- OCD and anxiety	0.026	0.021	0.003		0.012	0.006	0.007	*
- Other behavioral disorder	0.025	0.022	0.001		0.017	0.012	0.005	
Place of residence								
- Living with both parents	0.561	0.559	0.006		0.514	0.547	-0.022	
- Living with one parents	0.418	0.419	-0.006		0.468	0.433	0.024	
- Living with no parents	0.021	0.022	0.000		0.019	0.020	-0.002	
Etnicity								
- Danish	0.849	0.847	0.007		0.854	0.865	-0.013	
- Non-western	0.126	0.130	-0.008		0.124	0.111	0.016	
- Western	0.025	0.023	0.001		0.022	0.024	-0.002	
Age at birth								
- Mother	29.094	29.077	0.030		28.916	29.061	-0.162	
- Father	32.248	31.991	0.247		31.915	32.218	-0.348	
Income (1,000DKK)								
- Mother	231.962	243.491	-12.425		243.162	241.087	1.635	
- Father	331.748	346.997	-15.889		336.289	347.120	-10.610	
Etnicity - Mother								
- Danish	0.814	0.798	0.024		0.826	0.829	-0.005	
- Non-western	0.147	0.161	-0.021		0.140	0.136	0.008	
- Western	0.039	0.041	-0.002		0.034	0.034	-0.002	
Etnicity - Father								
- Danish	0.831	0.823	0.014		0.843	0.863	-0.025	
- Non-western	0.134	0.146	-0.018		0.131	0.111	0.024	
- Western	0.034	0.031	0.003		0.026	0.026	0.001	
Employment status - Mother								
- No benefits	0.642	0.661	-0.014		0.668	0.652	0.016	
- ALMP	0.216	0.203	0.008		0.194	0.208	-0.018	
- SU	0.031	0.027	0.003		0.024	0.035	-0.012	
- Pension/leave	0.111	0.109	0.003		0.115	0.104	0.014	
Employment status - Father								
- No benefits	0.750	0.767	-0.018		0.766	0.735	0.039	*
- ALMP	0.133	0.127	0.007		0.112	0.125	-0.015	
- SU	0.003	0.009	-0.006	**	0.005	0.006	-0.001	
- Pension/leave	0.113	0.097	0.017		0.117	0.134	-0.023	*
Education - Mother								

- No education	0.008	0.011	-0.002		0.009	0.014	-0.006	
- Primary School	0.245	0.232	0.015		0.221	0.252	-0.026	
- High School	0.057	0.050	0.006		0.049	0.054	-0.005	
- Voccational	0.433	0.449	-0.014		0.462	0.447	0.017	
- Short University Degree	0.045	0.037	0.009		0.043	0.036	0.004	
- Medium University Degree	0.181	0.185	-0.005		0.174	0.167	0.004	
- Long University Degree	0.030	0.037	-0.009		0.043	0.029	0.013	*
Education - Father								
- No education	0.017	0.016	0.000		0.008	0.014	-0.005	
- Primary School	0.287	0.268	0.015		0.275	0.312	-0.034	
- High School	0.032	0.043	-0.013	*	0.039	0.032	0.005	
- Voccational	0.511	0.510	0.012		0.522	0.461	0.060	***
- Short University Degree	0.051	0.052	-0.003		0.067	0.063	0.001	
- Medium University Degree	0.068	0.067	0.000		0.058	0.072	-0.012	
- Long University Degree	0.033	0.043	-0.012	*	0.031	0.046	-0.014	
Observations	1,841	1,918	3,759		1,174	1,161	2,335	

*Note: ***p<0.01; **p<0.05; *p<0.1. Column 1-2 and 4-5 report the mean for each treatment group. Column 3 and 6 report the difference between the two treatment groups by regressing each baseline covariate on the treatment indicator, including randomization strata fixed effect and clustering at the school level. Baseline data are obtained from register data collected before the beginning of the intervention. Pupils are allowed to have more than one educational interest at the 8th grade risk assessment. They are only evaluated on personal, social and overall educational readiness for educations in which they indicate interest. The table is based on non-missing data.*

Table S.3: Balance tests - camp selected pupils (ATT)

	Round 1 and 3				Round 2			
	Camp+	**Control**	**Diff.**		**Camp+**	**Camp**	**Diff.**	
Language Comprehension								
- Grade 6	-0.522	-0.391	-0.148	**	-0.530	-0.461	-0.064	
- Grade 4	-0.572	-0.408	-0.160	***	-0.516	-0.460	-0.044	
- Grade 2	-0.379	-0.349	-0.017		-0.446	-0.373	-0.079	
Decoding								
- Grade 6	-0.609	-0.474	-0.146	***	-0.595	-0.557	-0.047	
- Grade 4	-0.575	-0.463	-0.104	**	-0.593	-0.597	-0.000	
- Grade 2	-0.565	-0.460	-0.093	*	-0.647	-0.523	-0.136	**
Text Comprehension								
- Grade 6	-0.637	-0.554	-0.101	**	-0.640	-0.627	-0.018	
- Grade 4	-0.584	-0.561	-0.023		-0.588	-0.601	0.010	
- Grade 2	-0.553	-0.455	-0.094	*	-0.663	-0.531	-0.148	**
Overall Reading								
- Grade 6	-0.686	-0.550	-0.153	***	-0.682	-0.636	-0.050	
- Grade 4	-0.654	-0.541	-0.108	**	-0.646	-0.631	-0.013	
- Grade 2	-0.570	-0.481	-0.078		-0.671	-0.545	-0.139	**
Numbers and Algebra								
- Grade 6	-0.650	-0.461	-0.196	***	-0.486	-0.509	0.024	
- Grade 3	-0.495	-0.411	-0.083		-0.422	-0.531	0.095	*
Geometry								
- Grade 6	-0.557	-0.440	-0.121	***	-0.493	-0.522	0.032	
- Grade 3	-0.482	-0.420	-0.054		-0.453	-0.481	0.023	
Statistics and Probability								
- Grade 6	-0.634	-0.508	-0.133	***	-0.515	-0.572	0.058	
- Grade 3	-0.552	-0.452	-0.095	*	-0.508	-0.524	0.002	
Overall Math								
- Grade 6	-0.690	-0.528	-0.168	***	-0.558	-0.599	0.043	
- Grade 3	-0.575	-0.482	-0.087	*	-0.519	-0.576	0.045	
Educational interest at 8th grade assessment								
- High School	0.557	0.572	-0.019		0.488	0.548	-0.056	
- Vocational traning	0.690	0.675	0.015		0.694	0.652	0.043	
- 2-year High School	0.247	0.198	0.045		0.136	0.110	0.023	
- Other	0.026	0.012	0.016		0.017	0.021	-0.007	
Personal ready at 8th grade assessment								
- 3-year High School	0.323	0.203	0.109	***	0.286	0.224	0.055	

- Vocational traning	0.411	0.306	0.090	**	0.381	0.283	0.088	**
- 2-year High School	0.412	0.260	0.122	*	0.277	0.241	-0.028	
Social ready at 8th grade assessment								
- 2-year High School	0.525	0.480	0.034		0.542	0.517	0.016	
- Vocational training	0.595	0.540	0.060		0.568	0.512	0.039	
- 2-year High School	0.596	0.510	0.134		0.607	0.497	0.051	
Academic ready at 8th grade assessment								
- 3-year High School	0.048	0.099	-0.052	***	0.073	0.072	-0.001	
- Vocational training	0.246	0.311	-0.075	**	0.298	0.295	0.009	
- 2-year High School	0.246	0.312	-0.076	**	0.298	0.295	0.009	
- GPA (std.)	-1.185	-1.109	-0.085	**	-1.153	-1.170	0.026	
Overall ready at 8th grade assessment								
- 3-year High School	0.000	0.000	0.000		0.003	0.000	0.004	
- Vocational training	0.083	0.066	0.005		0.073	0.068	0.002	
- 2-year High School	0.177	0.115	0.047		0.058	0.110	-0.034	
Personality Traits								
- Grit	-0.508	-0.432	-0.096	**	-0.477	-0.509	0.026	
- Self-control	-0.151	-0.235	0.073		-0.325	-0.247	-0.075	
- Self-concept	0.049	0.011	0.062		-0.312	-0.369	0.052	
- Mindset	0.045	0.023	0.015		-0.316	-0.266	-0.039	
- General risk preferences	-0.044	0.109	-0.142	***	0.030	-0.006	0.035	
- Positive risk preferences	-0.520	-0.392	-0.133		-0.458	-0.400	-0.061	
- Negative risk preferences	-0.046	-0.304	0.237	**	-0.228	-0.253	0.031	
- Patience1	-0.009	-0.027	0.023		-0.200	-0.174	-0.010	
- Patience2	-0.081	-0.113	0.030		-0.118	-0.210	0.092	
- Self-control awareness	0.311	0.182	0.126	*	0.252	0.231	0.006	
- Academic self-perception	-0.382	-0.313	-0.074		-0.384	-0.439	0.047	
- Academic self-concept	-0.655	-0.597	-0.068		-0.602	-0.695	0.087	
Strengths and Difficulties Questionnaire								
- Prosocial behaviour	-0.158	-0.246	0.073		-0.262	-0.193	-0.071	
- Emotional symptoms	0.077	0.083	-0.018		0.055	0.100	-0.041	
- Conduct problems	0.351	0.441	-0.077		0.418	0.389	0.024	
- Hyperactivity/inattention	0.389	0.396	-0.000		0.426	0.452	-0.033	
- Peer relationship problems	0.348	0.294	0.055		0.332	0.319	0.013	
- Total difficulties score	0.396	0.411	-0.013		0.412	0.429	-0.020	
Conscientiousness								
- Grade 7	-0.515	-0.387	-0.148	***	-0.434	-0.503	0.063	
- Grade 6	-0.383	-0.383	-0.016		-0.344	-0.366	0.010	
Agreeableness								

- Grade 7	-0.214	-0.320	0.112	**	-0.285	-0.343	0.071	
- Grade 6	-0.153	-0.228	0.080		-0.211	-0.316	0.101	*
Neuroticism								
- Grade 7	0.149	0.174	-0.004		0.126	0.225	-0.090	
- Grade 6	0.110	0.101	0.025		0.148	0.110	0.044	
Academic self-perception								
- Grade 7	-0.696	-0.604	-0.119	**	-0.611	-0.658	0.039	
- Grade 6	-0.402	-0.365	-0.068		-0.412	-0.437	0.026	
Academic well-being								
- Grade 7	-0.652	-0.534	-0.139	***	-0.576	-0.617	0.036	
- Grade 6	-0.436	-0.432	-0.023		-0.436	-0.440	-0.003	
Social well-being								
- Grade 7	-0.161	-0.205	0.027		-0.107	-0.221	0.104	
- Grade 6	-0.105	-0.116	-0.010		-0.139	-0.133	-0.011	
Order and quietness								
- Grade 7	-0.179	-0.204	0.019		-0.135	-0.163	0.034	
- Grade 6	-0.118	-0.229	0.086		-0.106	-0.096	-0.008	
Support and inspiration								
- Grade 7	-0.269	-0.418	0.134	**	-0.319	-0.370	0.047	
- Grade 6	-0.096	-0.215	0.107	*	-0.093	-0.195	0.107	*
Sick absence								
- Grade 7	3.740	4.285	-0.536	*	4.172	4.015	0.214	
- Grade 6	3.790	3.926	-0.102		4.109	3.898	0.112	
Illegal absence								
- Grade 7	2.182	2.087	0.040		1.716	1.791	-0.109	
- Grade 6	1.354	1.204	0.120		0.826	1.060	-0.244	
Legal absence								
- Grade 7	1.699	1.702	-0.032		1.698	1.643	0.103	
- Grade 6	1.330	1.329	0.016		1.346	1.248	0.077	
Dyslexic information								
- Dyslexic	0.176	0.113	0.063	***	0.165	0.168	-0.003	
- Uncertain phonological	0.051	0.044	0.008		0.041	0.060	-0.015	
- Not dyslexic	0.028	0.024	0.003		0.022	0.028	-0.006	
- Not tested	0.745	0.819	-0.074	***	0.772	0.743	0.023	
- NOTA membership	0.200	0.146	0.052	**	0.201	0.243	-0.042	
Schooling information								
- School starting age	6.252	6.259	-0.008		6.273	6.257	0.007	
- Number of classes retaken	0.113	0.103	0.005		0.113	0.129	-0.011	
- Number of school changes	0.901	0.923	-0.008		0.921	0.925	0.006	

Child diagnosis							
- ADHD	0.018	0.018	-0.002		0.000	0.005	-0.005	**
- Autisme	0.006	0.004	0.003		0.000	0.001	-0.001	
- OCD and anxiety	0.012	0.018	-0.007		0.008	0.005	0.003	
- Other behavioral disorder	0.017	0.025	-0.009		0.025	0.016	0.011	*
Place of residence							
- Living with both parents	0.553	0.527	0.026		0.504	0.542	-0.033	
- Living with one parents	0.426	0.447	-0.020		0.482	0.443	0.035	
- Living with no parents	0.021	0.026	-0.005		0.014	0.015	-0.002	
Etnicity							
- Danish	0.842	0.855	-0.002		0.868	0.861	0.007	
- Non-western	0.133	0.119	0.004		0.110	0.114	-0.003	
- Western	0.025	0.026	-0.002		0.022	0.025	-0.004	
Age at birth							
- Mother	28.949	28.904	0.008		28.823	28.962	-0.126	
- Father	31.910	31.843	0.029		31.779	31.965	-0.205	
Income (1,000DKK)							
- Mother	224.790	241.804	-12.816		235.731	234.917	0.339	
- Father	313.529	357.524	-42.531	***	332.146	337.463	-3.578	
Etnicity - Mother							
- Danish	0.809	0.804	0.019		0.842	0.825	0.016	
- Non-western	0.153	0.148	-0.008		0.124	0.142	-0.015	
- Western	0.038	0.048	-0.011		0.034	0.033	-0.001	
Etnicity - Father							
- Danish	0.821	0.840	-0.008		0.863	0.864	-0.001	
- Non-western	0.143	0.129	0.003		0.109	0.110	-0.001	
- Western	0.036	0.031	0.005		0.028	0.026	0.002	
Employment status - Mother							
- No benefits	0.638	0.650	-0.004		0.663	0.657	0.010	
- ALMP	0.221	0.213	-0.000		0.190	0.212	-0.028	
- SU	0.040	0.026	0.013	*	0.023	0.041	-0.019	**
- Pension/leave	0.102	0.111	-0.010		0.125	0.090	0.037	**
Employment status - Father							
- No benefits	0.724	0.776	-0.053	**	0.757	0.738	0.027	
- ALMP	0.152	0.118	0.034	*	0.114	0.123	-0.013	
- SU	0.004	0.008	-0.005		0.008	0.006	0.002	
- Pension/leave	0.120	0.097	0.024		0.120	0.134	-0.016	
Education - Mother							
- No education	0.010	0.012	-0.002		0.003	0.017	-0.013	**

- Primary School	0.266	0.223	0.041	**	0.228	0.245	-0.017	
- High School	0.050	0.052	-0.004		0.051	0.056	-0.006	
- Voccational	0.452	0.469	-0.010		0.500	0.466	0.035	
- Short University Degree	0.040	0.032	0.008		0.036	0.039	-0.003	
- Medium University Degree	0.155	0.182	-0.030	*	0.149	0.158	-0.011	
- Long University Degree	0.028	0.030	-0.002		0.033	0.019	0.014	*
Education - Father								
- No education	0.020	0.020	-0.001		0.007	0.013	-0.007	
- Primary School	0.304	0.262	0.036		0.294	0.295	-0.002	
- High School	0.032	0.037	-0.008		0.036	0.028	0.006	
- Voccational	0.504	0.518	-0.001		0.548	0.491	0.059	**
- Short University Degree	0.053	0.045	0.006		0.051	0.060	-0.010	
- Medium University Degree	0.060	0.075	-0.016		0.043	0.073	-0.027	**
- Long University Degree	0.028	0.042	-0.016	**	0.022	0.042	-0.019	*
Observations	955	1,103	2,058		631	748	1,379	

*Note: ***p<0.01; **p<0.05; *p<0.1. Column 1-2 and 4-5 report the mean for each treatment group. Column 3 and 6 report the difference between the two treatment groups by regressing each baseline covariate on the treatment indicator, including randomization strata fixed effect and clustering at the school level. Baseline data are obtained from register data collected before the beginning of the intervention. Pupils are allowed to have more than one educational interest at the 8th grade risk assessment. They are only evaluated on personal, social and overall educational readiness for educations in which they indicate interest. The table is based on non-missing data.*

Table S.4: Short-run effects of *Camp+* vs. *Camp*: performance in the national reading test in grade 8

	Language Comprehension		Decoding		Text Comprehension		Overall	
ATT	0.047	0.081	0.029	0.046	0.070	0.071	0.060	0.078
	(0.081)	(0.076)	(0.051)	(0.047)	(0.060)	(0.048)	(0.061)	(0.051)
Mean outcome, Camp	-.373	-.373	-.622	-.622	-.704	-.704	-.700	-.700
R-squared	.014	.211	.018	.426	.025	.376	.015	.432
Observations	1,316	1,316	1,316	1,316	1,316	1,316	1,316	1,316
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes	No	Yes	No	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. Baseline treatment category is Camp. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table S.5: Short-run effects of *Camp+* vs. *Camp*: performance in the national math test in grade 8

	Numbers and Algebra		Geometry		Statistics and Probability		Overall	
ATT	-0.019	-0.030	-0.020	-0.040	-0.012	-0.021	-0.018	-0.037
	(0.057)	(0.042)	(0.063)	(0.047)	(0.066)	(0.047)	(0.063)	(0.046)
Mean outcome, Camp	-.710	-.710	-.707	-.707	-.669	-.669	-.751	-.751
R-squared	.015	.437	.016	.414	.012	.428	.015	.512
Observations	1,321	1,321	1,321	1,321	1,321	1,321	1,321	1,321
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes	No	Yes	No	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. Baseline treatment category is Camp. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table S.6: Effects of the camp on the performance in the final exams in grade 9, split-up in the oral and written parts

	Danish				Math			
	Written		Oral		Written		Oral	
ITT	-0.043	-0.007	-0.070	-0.040	0.020	0.064	0.013	0.108
	(0.055)	(0.035)	(0.047)	(0.037)	(0.061)	(0.047)	(0.100)	(0.087)
Mean outcome, Control	-.059	-.059	-.038	-.038	-.102	-.102	-.100	-.100
R-squared	.015	.677	.011	.388	.015	.664	.053	.465
Observations	4,759	4,759	4,722	4,722	4,743	4,743	875	875
ITT-NR	-0.017	0.011	-0.090*	-0.052	0.028	0.096*	0.027	0.085
	(0.051)	(0.039)	(0.052)	(0.047)	(0.058)	(0.050)	(0.082)	(0.112)
LATE	-0.036	0.023	-0.183*	-0.105	0.057	0.197*	0.055	0.174
	(0.104)	(0.080)	(0.107)	(0.097)	(0.119)	(0.101)	(0.167)	(0.229)
Mean outcome, Control	-.732	-.732	-.581	-.581	-.778	-.778	-.673	-.673
R-squared	.019	.529	.018	.268	.013	.482	.056	.295
Observations	1,879	1,879	1,847	1,847	1,864	1,864	349	349
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes	No	Yes	No	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. Outcome only exists for round 1. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Oral math exam is an extract exam. Standard errors in parentheses are clustered at the school level.*

Table S.7: Effects of the camp on the education choice three years after the camp

	3-year High School		Vocational training		2-year High School		No educ.	
ITT	-0.036	-0.016	0.038**	0.027**	-0.006	-0.009	0.002	-0.004
	(0.028)	(0.016)	(0.017)	(0.013)	(0.010)	(0.009)	(0.012)	(0.009)
Mean outcome, Control	.607	.607	.201	.201	.091	.091	.095	.095
R-squared	.016	.420	.008	.238	.003	.063	.005	.152
Observations	4,820	4,820	4,820	4,820	4,820	4,820	4,820	4,820
ITT-NR	-0.023	0.001	0.062***	0.049***	-0.010	-0.008	-0.027	-0.037**
	(0.032)	(0.023)	(0.022)	(0.019)	(0.016)	(0.016)	(0.021)	(0.018)
LATE	-0.048	0.003	0.127***	0.101***	-0.020	-0.017	-0.055	-0.076**
	(0.066)	(0.047)	(0.046)	(0.038)	(0.032)	(0.034)	(0.043)	(0.038)
Mean outcome, Control	.342	.342	.320	.320	.130	.130	.193	.193
R-squared	.033	.333	.020	.185	.008	.057	.012	.163
Observations	1,931	1,931	1,931	1,931	1,931	1,931	1,931	1,931
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes	No	Yes	No	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. Outcome only exists for round 1. Educational enrollment is measured September* 31^{th} *three years after the camp. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table S.8: Long-run effects of *Camp+* vs. *Camp*: performance in the final tests in grade 9 and likelihood of being enrolled in no education 2 years after the camp

	Danish score		Math score		No education	
ATT	0.008	0.021	-0.022	-0.055	-0.004	0.002
	(0.050)	(0.042)	(0.056)	(0.041)	(0.013)	(0.013)
Mean outcome, Camp	-.955	-.955	-.835	-.835	.066	.066
R-squared	.028	.489	.034	.483	.015	.141
Observations	1,317	1,317	1,310	1,310	1,344	1,344
Strata	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes	No	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. Baseline treatment category is Camp. Educational enrollment is measured September* 31^{th} *two years after the camp. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table S.9a: Effects of the camp on non-cognitive skills, measured by psychological scales

	Grit		Self-control		Self-concept		Mindset		Total difficult score	
ITT	-0.001	0.009	0.016	0.027	0.013	0.005	0.029	0.045	0.010	-0.010
	(0.034)	(0.021)	(0.030)	(0.022)	(0.030)	(0.020)	(0.044)	(0.046)	(0.037)	(0.030)
Mean outcome, Control	-.010	-.010	-.018	-.018	.001	.001	-.025	-.025	.006	.006
R-squared	.006	.490	.008	.414	.006	.487	.009	.221	.016	.403
Observations	6,993	6,993	6,976	6,976	6,957	6,957	3,533	3,533	6,876	6,876
ITT-NR	-0.017	0.005	0.012	0.007	0.009	-0.023	0.075	0.099	-0.002	-0.015
	(0.042)	(0.032)	(0.041)	(0.034)	(0.036)	(0.030)	(0.058)	(0.064)	(0.046)	(0.043)
LATE	-0.036	0.011	0.025	0.014	0.018	-0.047	0.154	0.202	-0.004	-0.032
	(0.086)	(0.065)	(0.084)	(0.070)	(0.073)	(0.062)	(0.119)	(0.131)	(0.095)	(0.087)
Mean outcome, Control	-.374	-.374	-.161	-.161	.040	.040	-.321	-.321	.346	.346
R-squared	.012	.410	.015	.411	.081	.485	.023	.187	.017	.350
Observations	2,550	2,550	2,539	2,539	2,529	2,529	1,249	1,249	2,481	2,481
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Mindset, Positive and Negative risk preference and Patience1 are only measured in round 3. Standard errors in parentheses are clustered at the school level.*

Table S.9b: Effects of the camp on non-cognitive skills, measured by psychological scales - cont'd

	General risk preferences		Positive risk preferences		Negative risk preferences		Patience2		Patience1	
ITT	0.033	0.030	-0.021	0.000	0.052	0.016	-0.012	-0.006	0.027	0.001
	(0.025)	(0.023)	(0.051)	(0.037)	(0.063)	(0.043)	(0.026)	(0.022)	(0.035)	(0.032)
Mean outcome, Control	-.018	-.018	.014	.014	-.057	-.057	.002	.002	-.018	-.018
R-squared	.003	.220	.004	.404	.009	.336	.003	.145	.008	.212
Observations	6,903	6,903	3,528	3,528	3,528	3,528	6,902	6,902	3,515	3,515
ITT-NR	0.007	0.038	-0.070	-0.062	0.074	0.029	-0.041	-0.045	0.039	0.017
	(0.040)	(0.039)	(0.074)	(0.060)	(0.073)	(0.063)	(0.042)	(0.040)	(0.054)	(0.053)
LATE	0.015	0.078	-0.144	-0.127	0.152	0.059	-0.084	-0.092	0.079	0.035
	(0.082)	(0.079)	(0.153)	(0.123)	(0.148)	(0.129)	(0.087)	(0.081)	(0.110)	(0.109)
Mean outcome, Control	-.019	-.019	-.308	-.308	-.212	-.212	-.103	-.103	-.176	-.176
R-squared	.013	.190	.009	.341	.011	.332	.010	.127	.008	.160
Observations	2,492	2,492	1,248	1,248	1,248	1,248	2,491	2,491	1,242	1,242
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Mindset, Positive and Negative risk preference and Patience1 are only measured in round 3. Standard errors in parentheses are clustered at the school level.*

Table S.10: Effects of the camp on the ERE

	December			
	High School		Vocational training	
ITT	-0.002	0.013	0.000	0.020
	(0.018)	(0.011)	(0.022)	(0.015)
Mean outcome, Control	.760	.760	.790	.790
R-squared	.011	.515	.008	.416
Observations	3,806	3,806	2,677	2,677
ITT-NR	-0.008	0.002	-0.012	0.036
	(0.030)	(0.028)	(0.034)	(0.028)
LATE	-0.017	0.004	-0.024	0.074
	(0.061)	(0.058)	(0.069)	(0.058)
Mean outcome, Control	.383	.383	.613	.613
R-squared	.010	.313	.008	.322
Observations	1,247	1,247	1,364	1,364
Strata	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. Outcome only exists for round 1. Pupils are not able to apply separately for 2 and 3 years High School in 2017/2018 and the June assessment is introduced in 2018/2019. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table S.11: Effects of the camp on the personal skills assessed in the ERE

	December			
	High School		Vocational training	
ITT	0.017	0.017	0.001	0.021
	(0.014)	(0.012)	(0.023)	(0.016)
Mean outcome, Control	.861	.861	.813	.813
R-squared	.010	.463	.011	.401
Observations	3,710	3,710	2,606	2,606
ITT-NR	0.061*	0.043	-0.010	0.034
	(0.034)	(0.029)	(0.038)	(0.029)
LATE	0.124*	0.088	-0.019	0.069
	(0.069)	(0.060)	(0.077)	(0.059)
Mean outcome, Control	.607	.607	.655	.655
R-squared	.032	.397	.016	.329
Observations	1,197	1,197	1,337	1,337
Strata	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. Outcome only exists for round 1. Pupils are not able to apply separately for 2 and 3 years High School in 2017/2018 and the June assessment is introduced in 2018/2019. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table S.12: Effects of the camp on the social skills assessed in the ERE

	December			
	High School		Vocational training	
ITT	0.005	0.001	-0.007	0.009
	(0.012)	(0.009)	(0.021)	(0.013)
Mean outcome, Control	.913	.913	.879	.879
R-squared	.008	.461	.015	.418
Observations	3,710	3,710	2,606	2,606
ITT-NR	0.024	-0.002	-0.017	0.010
	(0.032)	(0.024)	(0.036)	(0.027)
LATE	0.050	-0.005	-0.034	0.020
	(0.065)	(0.049)	(0.073)	(0.054)
Mean outcome, Control	.748	.748	.773	.773
R-squared	.033	.441	.024	.351
Observations	1,197	1,197	1,337	1,337
Strata	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. Outcome only exists for round 1. Pupils are not able to apply separately for 2 and 3 years High School in 2017/2018 and the June assessment is introduced in 2018/2019. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table S.13: Effects of the camp on the preferred education choice in the ERE

	December					
	High School		Vocational training		10th grade	
ITT	0.001	0.004	-0.027	-0.026	0.004	-0.001
	(0.023)	(0.014)	(0.042)	(0.021)	(0.005)	(0.005)
Mean outcome, Control	.785	.785	.572	.572	.009	.009
R-squared	.010	.493	.015	.515	.006	.200
Observations	4,874	4,874	4,874	4,874	4,874	4,874
ITT-NR	0.002	0.018	-0.044	-0.032	0.002	-0.008
	(0.034)	(0.026)	(0.036)	(0.023)	(0.008)	(0.009)
LATE	0.004	0.037	-0.090	-0.066	0.004	-0.016
	(0.070)	(0.054)	(0.074)	(0.047)	(0.016)	(0.018)
Mean outcome, Control	.634	.634	.723	.723	.023	.023
R-squared	.027	.425	.035	.429	.009	.225
Observations	1,977	1,977	1,977	1,977	1,977	1,977
Strata	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes	No	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. Outcome only exists for round 1. Pupils are not able to apply for 2-year High School in 2017/2018 and the June assessment is introduced in 2018/2019. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table S.14: Effects of *Camp+* vs. *Camp* on the ERE

	December						June					
	3-year High School		Vocational training		2-year High School		3-year High School		Vocational training		2-year High School	
ATT	-0.032	-0.057*	-0.016	-0.026	-0.053	-0.137***	-0.119***	-0.149***	0.008	-0.017	-0.109*	-0.084
	(0.041)	(0.033)	(0.038)	(0.031)	(0.066)	(0.050)	(0.040)	(0.033)	(0.037)	(0.035)	(0.056)	(0.067)
Mean outcome, Camp	.363	.363	.602	.602	.473	.473	.488	.488	.661	.661	.582	.582
R-squared	.041	.317	.020	.270	.077	.470	.062	.340	.017	.293	.101	.455
Observations	633	633	978	978	300	300	614	614	992	992	299	299
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. Baseline treatment category is Camp. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table S.15: Effects of *Camp+* vs. *Camp* on the personal skills assessed in the ERA

	December						June					
	3-year High School		Vocational training		2-year High School		3-year High School		Vocational training		2-year High School	
ATT	-0.068	-0.091**	-0.029	-0.045	-0.142**	-0.151**	-0.087**	-0.102***	-0.002	-0.018	-0.135**	-0.105
	(0.042)	(0.035)	(0.037)	(0.032)	(0.068)	(0.063)	(0.038)	(0.033)	(0.035)	(0.032)	(0.052)	(0.070)
Mean outcome, Camp	.619	.619	.673	.673	.652	.652	.685	.685	.715	.715	.707	.707
R-squared	.023	.293	.018	.265	.079	.314	.031	.334	.016	.250	.120	.401
Observations	609	609	956	956	265	265	608	608	986	986	286	286
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. Baseline treatment category is Camp. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are*

Table S.16: Effects of *Camp+* vs. *Camp* on the preferred education choice in the ERA

	December							
	3-year High School		Vocational training		10th grade		2-year High School	
ATT	-0.038	-0.009	0.022	0.009	-0.001	0.000	-0.018	-0.006
	(0.042)	(0.025)	(0.033)	(0.019)	(0.003)	(0.004)	(0.035)	(0.024)
Mean outcome, Camp	.497	.497	.732	.732	.006	.006	.238	.238
R-squared	.024	.455	.030	.476	.009	.062	.029	.328
Observations	1,321	1,321	1,321	1,321	1,321	1,321	1,321	1,321
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes	No	Yes	No	Yes
	June							
	3-year High School		Vocational training		10th grade		2-year High School	
ATT	-0.028	-0.008	0.056*	0.038*	-0.004	-0.002	0.014	0.028
	(0.041)	(0.026)	(0.033)	(0.022)	(0.005)	(0.006)	(0.037)	(0.029)
Mean outcome, Camp	.479	.479	.728	.728	.010	.010	.221	.221
R-squared	.025	.443	.021	.422	.014	.054	.034	.290
Observations	1,321	1,321	1,321	1,321	1,321	1,321	1,321	1,321
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes	No	Yes	No	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. Baseline treatment category is Camp. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table S.17a: Effects of *Camp+* vs. *Camp* on non-cognitive skills, measured by psychological scales

	Grit		Self-control		Self-concept		Mindset		Total difficult score	
ATT	-0.008	-0.030	-0.035	-0.040	-0.028	-0.044	-0.027	-0.038	0.066	0.048
	(0.059)	(0.045)	(0.076)	(0.053)	(0.066)	(0.047)	(0.059)	(0.047)	(0.064)	(0.046)
Mean outcome, Camp	-.474	-.474	-.198	-.198	-.331	-.331	-.290	-.290	.396	.396
R-squared	.014	.421	.015	.403	.020	.476	.011	.222	.022	.449
Observations	1,159	1,159	1,156	1,156	1,150	1,150	1,150	1,150	1,137	1,137
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. Baseline treatment category is Camp. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table S.17b: Effects of *Camp+* vs. *Camp* on non-cognitive skills, measured by psychological scales - con'd

	General risk preferences		Positive risk preferences		Negative risk preferences		Patience2		Patience1	
ATT	0.067	0.073	0.086	0.109**	-0.145*	-0.150**	0.165***	0.191***	0.008	0.001
	(0.062)	(0.050)	(0.069)	(0.050)	(0.087)	(0.064)	(0.060)	(0.055)	(0.057)	(0.056)
Mean outcome, Camp	-.051	-.051	-.419	-.419	-.163	-.163	-.228	-.228	-.163	-.163
R-squared	.010	.248	.011	.396	.020	.298	.017	.182	.005	.162
Observations	1,148	1,148	1,150	1,150	1,150	1,150	1,146	1,146	1,144	1,144
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. Baseline treatment category is Camp. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table S.18: Effects of camp by gender: Performance in the national Danish test in grade 8

	Language Comprehension			Decoding			Text Comprehension			Overall		
	All	Boy	Girl	All	Boy	Girl	All	Boy	Girl	All	Boy	Girl
ITT	-0.033	-0.046	-0.025	0.017	0.035	0.003	0.065***	0.094***	0.038	0.017	0.033	0.006
	(0.043)	(0.044)	(0.050)	(0.024)	(0.027)	(0.029)	(0.021)	(0.025)	(0.029)	(0.028)	(0.031)	(0.031)
Mean outcome, Control	.024	.044	.003	.000	-.095	.100	-.057	-.158	.048	-.013	-.086	.062
R-squared	.186	.211	.190	.510	.512	.509	.520	.493	.555	.549	.538	.568
Observations	8,953	4,594	4,359	8,953	4,594	4,359	8,953	4,594	4,359	8,953	4,594	4,359
ITT-NR	-0.046	-0.070	-0.023	0.014	0.028	-0.005	0.090***	0.084**	0.103**	0.024	0.022	0.037
	(0.045)	(0.054)	(0.063)	(0.028)	(0.034)	(0.045)	(0.029)	(0.037)	(0.039)	(0.033)	(0.041)	(0.040)
LATE	-0.094	-0.142	-0.046	0.028	0.057	-0.010	0.184***	0.172**	0.210**	0.050	0.046	0.075
	(0.092)	(0.110)	(0.129)	(0.058)	(0.070)	(0.092)	(0.059)	(0.077)	(0.081)	(0.067)	(0.084)	(0.082)
Mean outcome, Control	-.233	-.183	-.305	-.459	-.483	-.425	-.574	-.585	-.559	-.519	-.512	-.528
R-squared	.213	.246	.210	.431	.454	.427	.342	.347	.381	.442	.461	.460
Observations	3,418	2,028	1,390	3,418	2,028	1,390	3,418	2,028	1,390	3,418	2,028	1,390
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table S.19: Effects of camp by gender: Performance in the national math test in grade 8

	Numbers and Algebra			Geometry			Statistics and Probability			Overall		
	All	Boy	Girl	All	Boy	Girl	All	Boy	Girl	All	Boy	Girl
ITT	0.068**	0.037	0.089**	0.043	0.045	0.038	0.063	0.042	0.090**	0.059*	0.045	0.076*
	(0.032)	(0.036)	(0.040)	(0.035)	(0.043)	(0.040)	(0.039)	(0.047)	(0.042)	(0.034)	(0.040)	(0.039)
Mean outcome, Control	-.064	-.043	-.086	-.042	-.020	-.065	-.033	-.039	-.028	-.050	-.036	-.064
R-squared	.640	.669	.614	.607	.629	.587	.601	.620	.587	.706	.729	.691
Observations	4,283	2,197	2,086	4,283	2,197	2,086	4,283	2,197	2,086	4,283	2,197	2,086
ITT-NR	0.094**	0.087*	0.078	0.091*	0.109**	0.067	0.117*	0.087	0.173***	0.100**	0.106*	0.123**
	(0.047)	(0.051)	(0.065)	(0.046)	(0.054)	(0.057)	(0.062)	(0.068)	(0.064)	(0.050)	(0.057)	(0.060)
LATE	0.192**	0.178*	0.160	0.185*	0.223**	0.138	0.240*	0.178	0.354***	0.204**	0.216*	0.251**
	(0.096)	(0.104)	(0.133)	(0.093)	(0.111)	(0.118)	(0.128)	(0.138)	(0.130)	(0.102)	(0.117)	(0.122)
Mean outcome, Control	-.645	-.596	-.719	-.625	-.569	-.708	-.619	-.585	-.672	-.678	-.628	-.754
R-squared	.452	.496	.410	.452	.517	.357	.460	.485	.472	.550	.586	.479
Observations	1,581	952	629	1,581	952	629	1,581	952	629	1,581	952	629
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*Notes:***p<0.01; **p<0.05; *p<0.1. Outcome for math only exists for round 3. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table S.20: Effects of camp by SES and academic performance: Performance in the national Danish test in grade 8

	Language Comprehension			Decoding			Text Comprehension			Overall		
	All	Low SES	Low perf.	All	Low SES	Low perf.	All	Low SES	Low perf.	All	Low SES	Low perf.
ITT	-0.033	-0.077	-0.080	0.017	0.006	-0.037	0.065***	0.132***	0.100**	0.017	0.016	-0.002
	(0.043)	(0.066)	(0.057)	(0.024)	(0.036)	(0.041)	(0.021)	(0.035)	(0.045)	(0.028)	(0.043)	(0.045)
Mean outcome, Control	.024	-.044	-.459	.000	-.169	-.720	-.057	-.354	-.840	-.013	-.232	-.827
R-squared	.186	.241	.228	.510	.487	.370	.520	.480	.253	.549	.522	.372
Observations	8,953	1,861	1,664	8,953	1,861	1,664	8,953	1,861	1,664	8,953	1,861	1,664
ITT-NR	-0.046	-0.061	-0.080	0.014	0.034	-0.037	0.090***	0.133**	0.100**	0.024	0.056	-0.002
	(0.045)	(0.077)	(0.057)	(0.028)	(0.048)	(0.041)	(0.029)	(0.052)	(0.045)	(0.033)	(0.054)	(0.045)
LATE	-0.094	-0.124	-0.164	0.028	0.071	-0.076	0.184***	0.273**	0.205**	0.050	0.114	-0.004
	(0.092)	(0.158)	(0.116)	(0.058)	(0.098)	(0.084)	(0.059)	(0.106)	(0.093)	(0.067)	(0.111)	(0.092)
Mean outcome, Control	-.233	-.286	-.459	-.459	-.544	-.720	-.574	-.697	-.840	-.519	-.625	-.827
R-squared	.213	.286	.228	.431	.460	.370	.342	.386	.253	.442	.471	.372
Observations	3,418	978	1,664	3,418	978	1,664	3,418	978	1,664	3,418	978	1,664
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table S.21: Effects of camp by SES and academic performance: Performance in the national math test in grade 8

	Numbers and Algebra			Geometry			Statistics and Probability			Overall		
	All	Low SES	Low perf.	All	Low SES	Low perf.	All	Low SES	Low perf.	All	Low SES	Low perf
ITT	0.068**	0.058	0.125**	0.043	0.061	0.135**	0.063	0.094	0.154*	0.059*	0.081*	0.151**
	(0.032)	(0.047)	(0.055)	(0.035)	(0.047)	(0.059)	(0.039)	(0.060)	(0.082)	(0.034)	(0.048)	(0.064)
Mean outcome, Control	-.064	-.313	-.917	-.042	-.342	-.910	-.033	-.352	-.927	-.050	-.362	-.988
R-squared	.640	.572	.383	.607	.603	.364	.601	.616	.430	.706	.676	.466
Observations	4,283	787	818	4,283	787	818	4,283	787	818	4,283	787	818
ITT-NR	0.094**	0.136	0.125**	0.091*	0.195***	0.135**	0.117*	0.230**	0.154*	0.100**	0.197**	0.151**
	(0.047)	(0.082)	(0.055)	(0.046)	(0.066)	(0.059)	(0.062)	(0.088)	(0.082)	(0.050)	(0.077)	(0.064)
LATE	0.192**	0.278	0.256**	0.185*	0.399***	0.277**	0.240*	0.471**	0.316*	0.204**	0.403**	0.309**
	(0.096)	(0.168)	(0.113)	(0.093)	(0.136)	(0.121)	(0.128)	(0.180)	(0.167)	(0.102)	(0.158)	(0.130)
Mean outcome, Control	-.645	-.734	-.917	-.625	-.756	-.910	-.619	-.819	-.927	-.678	-.829	-.988
R-squared	.452	.471	.383	.452	.508	.364	.460	.583	.430	.550	.591	.466
Observations	1,581	399	818	1,581	399	818	1,581	399	818	1,581	399	818
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*Notes:***p<0.01; **p<0.05; *p<0.1. Outcome for math only exists for round 3. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table S.22: Effects of *Camp+* vs. *Camp* by gender: Performance in the national Danish test in grade 8

	Language Comprehension			Decoding			Text Comprehension			Overall		
	All	Boy	Girl	All	Boy	Girl	All	Boy	Girl	All	Boy	Girl
ATT	0.081	0.120	-0.068	0.046	0.073	-0.060	0.071	0.012	0.071	0.078	0.088	-0.022
	(0.076)	(0.089)	(0.101)	(0.047)	(0.062)	(0.062)	(0.048)	(0.056)	(0.060)	(0.051)	(0.066)	(0.067)
Mean outcome, Camp	-.373	-.407	-.311	-.622	-.679	-.518	-.704	-.753	-.615	-.700	-.758	-.595
R-squared	.211	.253	.325	.426	.435	.449	.376	.450	.365	.432	.459	.498
Observations	1,316	851	465	1,316	851	465	1,316	851	465	1,316	851	465
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. Baseline treatment category is Camp. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table S.23: Effects of *Camp+* vs. *Camp* by gender: Performance in the national math test in grade 8

	Numbers and Algebra			Geometry			Statistics and Probability			Overall		
	All	Boy	Girl	All	Boy	Girl	All	Boy	Girl	All	Boy	Girl
ATT	-0.030	-0.083	0.012	-0.040	-0.062	-0.046	-0.021	-0.080	0.050	-0.037	-0.087*	-0.003
	(0.042)	(0.053)	(0.062)	(0.047)	(0.053)	(0.066)	(0.047)	(0.052)	(0.079)	(0.046)	(0.052)	(0.059)
Mean outcome, Camp	-.710	-.619	-.876	-.707	-.603	-.897	-.669	-.593	-.806	-.751	-.653	-.928
R-squared	.437	.451	.501	.414	.409	.539	.428	.472	.432	.512	.512	.595
Observations	1,321	856	465	1,321	856	465	1,321	856	465	1,321	856	465
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. Baseline treatment category is Camp. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table S.24: Effects of *Camp+* vs. *Camp* by SES and academic performance: Performance in the national Danish test in grade 8

	Language Comprehension			Decoding			Text Comprehension			Overall		
	All	Low SES	Low perf.	All	Low SES	Low perf.	All	Low SES	Low perf.	All	Low SES	Low perf.
ATT	0.081	0.031	-0.013	0.046	-0.065	0.038	0.071	0.028	0.081	0.078	-0.028	0.039
	(0.076)	(0.125)	(0.084)	(0.047)	(0.076)	(0.049)	(0.048)	(0.080)	(0.067)	(0.051)	(0.074)	(0.064)
Mean outcome, Camp	-.373	-.419	-.491	-.622	-.625	-.804	-.704	-.751	-.901	-.700	-.740	-.905
R-squared	.211	.280	.189	.426	.481	.420	.376	.379	.340	.432	.483	.385
Observations	1,316	374	834	1,316	374	834	1,316	374	834	1,316	374	834
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. Baseline treatment category is Camp. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*

Table S.25: Effects of *Camp+* vs. *Camp* by SES and academic performance: Performance in the national math test in grade 8

	Numbers and Algebra			Geometry			Statistics and Probability			Overall		
	All	Low SES	Low perf.	All	Low SES	Low perf.	All	Low SES	Low perf.	All	Low SES	Low perf.
ATT	-0.030	-0.055	-0.123**	-0.040	-0.127*	-0.135**	-0.021	-0.043	-0.090	-0.037	-0.079	-0.130**
	(0.042)	(0.065)	(0.050)	(0.047)	(0.065)	(0.054)	(0.047)	(0.071)	(0.054)	(0.046)	(0.060)	(0.051)
Mean outcome, Camp	-.710	-.841	-.889	-.707	-.836	-.835	-.669	-.814	-.843	-.751	-.896	-.923
R-squared	.437	.504	.349	.414	.500	.332	.428	.459	.356	.512	.597	.408
Observations	1,321	378	836	1,321	378	836	1,321	378	836	1,321	378	836
Strata	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*Notes: ***p<0.01; **p<0.05; *p<0.1. Baseline treatment category is Camp. The covariates is imputed with the value zero and a missing-indicator equal to one is added to the conditioning set if data on the covariates is missing. Standard errors in parentheses are clustered at the school level.*