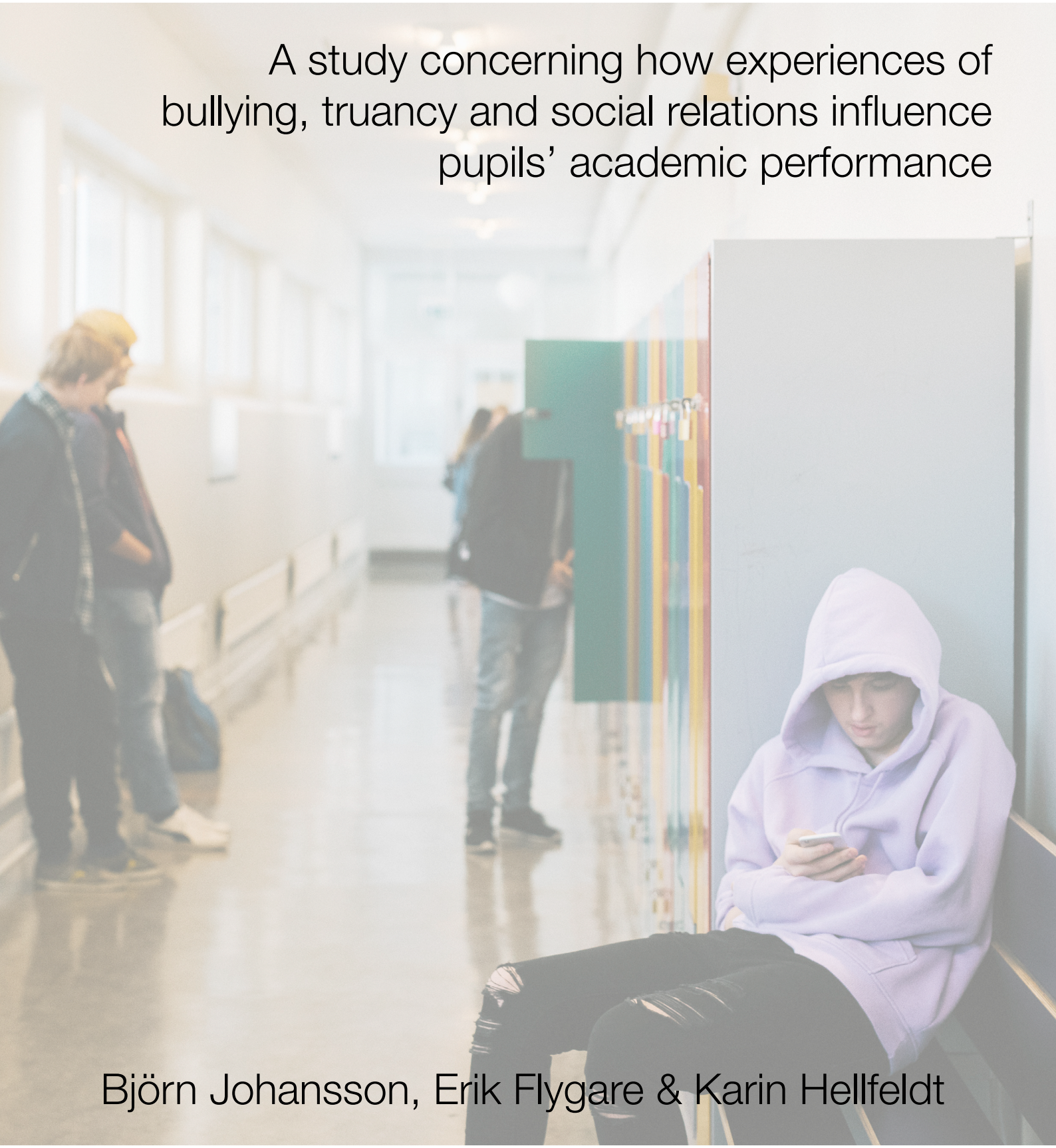
Pass or fail?

A study concerning how experiences of bullying, truancy and social relations influence pupils' academic performance



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Introduction

A safe and positive good school environment is vital for pupils' learning and social development (Thomas, Graham, Powell, & Fitzgerald, 2016; Devine & Cohen, 2007). Accordingly, Swedish schools' main task is to ensure that all children have access to high quality education within a safe and supportive environment.

Education and upbringing constitute the core component of the Swedish national school system. It is stipulated in the Swedish Education Act (2010:800) that education in the school system aims at pupils acquiring and developing knowledge and values. These two distinct missions – *the knowledge* and *the norms and values* – govern schools. According to the knowledge mission, the school is a place for formal education. Under the norms and values mission, it is clear that the school should represent and impart values of the inviolability of human life, individual freedom and integrity, the equal value of all people, equality between women and men, and solidarity with the weak and vulnerable. It is also clear that everybody who works in school should work for a school environment where pupils can feel safe and develop into democratic citizens. Although the two missions may be regarded as different one from the other, they are actually two sides of the coherent mission that governs and permeates all school activities (Swedish National Agency for Education, 2015). The norms and values, with the safeguarding of the inviolability of human life and the individual's right to freedom and integrity, is central for promoting the individual's knowledge development.

That pupils should feel safe at school, that there is room for critical discussion and diversity and that the equal value of all permeates all activities are central to facilitating the acquisition of knowledge. A safe and positive school climate, free of violation and degrading treatment, is central to pupils' learning and development (Thomas, et al., 2016; Devine & Cohen, 2007). However, various types of degrading treatment and bullying risk making the school environment an unsafe place, as well as contradicting the value base that the school claims to stand for. Despite the fact that these two missions are to govern activities, and despite the fact that their influence upon one another is underlined as having central importance (Swedish National Agency for Education 2011), there are today few studies that investigate the relationship between degrading treatment, bullying and school results, especially for Swedish pupils.

Research indicates that degrading treatment and bullying seriously compromise schoolchildren's psychosocial functioning and social well-being in general and their academic performance in particular (see Nakamoto & Schwartz, 2010). Victimization and low academic

performance often go hand-in-hand because they experience negative psychosocial consequences, which can inhibit their participation in the classroom and undermine their achievement (Ladd, Herald-Brown, & Reiser, 2008).

The negative association between degrading treatment/bullying and academic performance is well documented. Victimized pupils risk failing school since victimization is related to insufficient involvement, absence, truancy, lower levels of participation and lacking motivation and interest in school (Kutsyuruba, Klinger & Hussain, 2015; Wright, 2015; Buhs, Ladd, & Herald., 2006; Juvonen, Nishina, & Graham, 2000; Wentzela 1998; Kochenderfer & Ladd, 1996a; Kochenderfer & Ladd, 1996b; Parker & Asher, 1987). Results, however, are not unambiguous. The link between victimization and academic performance is complex and influenced by a variety of factors. On the one hand, victimization contributes to poorer academic performance through mediating influences of internalizing behaviours and factors, often manifested in depression, anxiety and poor self-esteem, which, in turn predicts their academic performance (DeRosier & Mercer, 2009; Graham, Bellmore, & Mize, 2006; Hawker & Boulton, 2000; Nishina, Juvonen & Witkow, 2005; Schwartz, Gorman, Nakamoto & Toblin, 2005). On the other hand, research shows that factors such as friendship quality, social support from peers, peer group acceptance/rejection and school climate have a moderating effect on the association between victimization and academic performance (Schwartz, Gorman, Dodge, Pettit, & Bates, 2008; Ladd, Kochenderfer, & Coleman, 1997). Research further shows that the academic performance of pupils not directly involved in bullying may also be negatively affected, i.e. in schools with a high degree of bullying, pupils appear to perform worse than pupils in schools with a low degree of bullying (Strøm, Thoresen, Wentzel-Larsen, & Dyb, 2013; Konishi, Hymel, Zumbo & Li, 2010).

In terms of methodology, research in the area has to a large extent studied the relationship between bullying and academic performance using a cross-sectional design, making it difficult to investigate more precisely how the links between bullying and academic performance actually manifest themselves. This shortcoming emphasizes the need for longitudinal data to be able to investigate how stability and change in victimization and other factors contribute to pupils' academic performance over time in order to identify mechanisms that generate or counteract negative academic performance (Nakamoto & Schwartz, 2010).

In view of the complexity of the research results, there are reasons to deepen the knowledge about the link between bullying and academic performance, not least because the results vary between studies, but also due to different cultural settings and methodological aspects (Espelage, Hong, Rao, & Low, 2013; Greenman, Schneider, & Tomada, 2009).

The purpose of this study is thus to deepen the understanding of whether, and in what way, pupils' academic performance is related to degrading treatment and bullying. More specifically, the study aims to investigate:

- how incidences of degrading treatment and bullying co-varies with pupils' academic performance,
- how pupils' experiences of bullying and degrading treatment, as victims, perpetrators or both, or the lack of such experiences, are associated with academic performance,
- if the academic performance of girls and boys is influenced differently depending on which experiences of degrading treatment and bullying they have, and
- how other factors, alone or in combination with others, are associated with pupils' ability to perform academically.

The focus is thus to examine the links between the experiences of bullying / degrading treatment and pupils' grades. In this respect, it concerns analysing the extent to which experiences of being involved in bullying (as victims, perpetrators or both) constitutes a risk factor in relation to fail grades in the basic subjects English, Mathematics and Swedish (or Swedish as a second language), and also to examine if, and in what way, other factors such as absenteeism (truancy) and relations to peers (social relations) affect pupils' ability to achieve approaved grades. Or, to express it differently, if events in the informal social system (the school as a social system) influence pupils' academic achievements (the school as an administrative system) (Eriksson, Lindberg, Flygare & Daneback, 2002).

Bullying and academic performance – what do we know?

That bullying may constitute a risk to health in both the short and long term has been demonstrated in many studies (for an overview, see, for example, Gini & Pozzoli, 2013; McDougall & Vaillancourt, 2015; Nakamoto & Schwartz, 2010; Wolke & Lereya, 2015). Studies concerning bullying as a risk factor in relation to pupils' academic performance, however, are not equally common. Bullying victimization and poor academic performance nevertheless risk going hand in hand since the negative consequences that bullying gives rise to risk impeding pupils' participation in the classroom and various other educational activities (Ladd, Herald-Brown, & Reiser, 2008). Developing positive relations with other pupils is an important part of adjusting to the school environment and creates good conditions for learning. Bullying victimization has been studied both as a risk factor for and as a consequence of poor academic performance (Nakamoto & Schwartz, 2010). Olweus (1978) argues that pupils who perform poorly or very well at school are more likely to be bullied. Studies have also shown

that pupils with learning difficulties have a greater risk of being victimized (Luciano & Savage, 2007; Nabuzoka, 2003). Other studies, however, have argued that negative school results are a consequence of bullying, where bullying leads to pupils experiencing stress and a negative psychosocial mood, this in turn affecting pupils' ability to perform at school (Juvonen et al., 2000).

Both cross-sectional and longitudinal studies have related bullying to poorer academic performance. Pupils who are subjected to bullying run greater risks of absence from school, poorer academic performance and lack of motivation and interest in schoolwork as well as experiencing insufficient support from teachers (Attwood & Croll, 2006; Hellfeldt, Johansson & Lindberg, 2014; Kutsyuruba, Klinger & Hussain, 2015; Wright, 2015; Buhs, Ladd, & Herald., 2006; Juvonen, Nishina, & Graham, 2000; Wentzela 1998; Kochenderfer & Ladd, 1996a; Kochenderfer & Ladd, 1996b; Parker & Asher, 1987).

Although a number of studies point to there being a relation between bullying and negative academic performance, there is no unified picture of how the relationship between the two occurs. Some studies indicate a relatively strong association between bullying and academic performance (see, for example, Schwartz, Chang & Farver, 2001) while others show a weak association (see, for example, Buhs & Ladd, 2001). Still others have claimed there to be no relation between bullying and academic performance (Woods & Wolke, 2004). It emerged from a meta-analysis, including 33 studies and a total of 29,552 adolescents, that the results of previous studies are partly contradictory and that no clear pattern of the correlation between bullying and academic performance exists (Nakamoto & Schwartz, 2010). The result of the meta-analysis, however, shows a weakly negative correlation ($r = -0.12$) between bullying and academic performance, while the result also shows a high degree of heterogeneity in the field and between the results of different studies. The ways of evaluating academic performance and whether or not the studies are based on self-reported victimization are considered important explanations for heterogeneity in the field (Espelage et al., 2013; Nakamoto & Schwartz, 2010).

Previous research is also ambiguous when it comes to gender differences. Certain studies have shown that victimization affects girls' academic performance more negatively than it does boys' (Graham, Bellmore & Mize, 2006; Hoglund 2007; Mundy et al., 2017). Other studies have been unable to demonstrate any gender differences; rather that bullying affects boys' and girls' academic performance to an equal extent (Nakamoto & Schwartz, 2010; Schwartz et al., 2005).

An aggravating circumstance in terms of attempts to explain the relationship between bullying and school achievement is associated with all possible intermediate factors that may affect the relationship. Studies have shown that bullying victimization can be related to negative academic

performance because pupils who are victimized develop internalized problems which in turn affect their opportunities at school (DeRosier & Mercer, 2009; Graham, Bellmore, & Mize, 2006; Hawker & Boulton, 2000; Nishina, Juvonen, & Witkow, 2005; Schwartz et al., 2005). Anxiety, symptoms of depression and low self-esteem are common among bullied pupils, which in turn affects their academic performance (Juvonen, Nishina, & Graham, 2000; Schwartz et al., 2005). Studies have also shown that friendships, support from friends and the degree of peer group acceptance moderate the correlation between victimization and academic performance (Schwartz, Gorman, Dodge, Pettit, & Bates, 2008; Ladd, Kochenderfer, & Coleman, 1997). Supportive peer relations can thus increase a pupil's sense of well-being and self-esteem, which in turn contributes to increased motivation for school performance and involvement (Wentzela, 1998).

The relationship between pupil and educator is also significant in relation to pupils' academic performance (Osterman, 2000). Pupils who feel they are supported by their teachers are more involved in school, are more attached to their school and exhibit better school results (Flashpohler et al., 2009; Konishi et al., 2010; Sakiz, Pape & Hoy, 2012; Yeung & Leadbeater, 2010). Caring relations between teachers and pupils are central to pupils' well-being at school (Thomas et al., 2016). Despite this, studies show that bullied pupils experience a lower degree of support from their teachers and generally have quite negative experiences of their teachers (Demaray et al., 2005; Furlong et al, 1995; Hellfeldt et al., 2014; 2016; Malecki & Demaray, 2004; Rigby, 2000). Since the feeling of consideration and care from teachers is central to pupils' learning, bullied pupils' negative relations to their teachers risk worsening pupils' attachment to the school and poorer academic performance.

Theoretical framework

Viewed as an *administrative system*, school activities are regulated at the national level by a multitude of various laws, regulations and governing documents. It is the task of school staff, with the headmaster holding the ultimate executive responsibility, to implement school policy decisions, for instance replacing old grading scales with new ones. The example has special relevance in this context as a new grading scale was introduced in the Swedish school system in conjunction with the new curriculum in 2011, but was not fully implemented until later owing to various transitional rules. This thus affected the school staff and pupils involved in this study. From the autumn term of 2012, pupils in year 6 were graded in accordance with the new grading scale. The new grading scale and curriculum apply from the year group reading 8th grade in the 2011/2012 school year. All pupils now follow Lgr 11, which involves all pupils in elementary

school being graded from year 6. Where pupils are concerned, the administrative system makes itself felt, among other things, through class placement. While pupils were previously automatically placed in classes on the basis of a school's catchment area, it is now much easier for pupils (and/or their parents) to choose schools, though not to choose classes. The class may be considered as a unit in the administrative system that the individual pupil cannot usually choose freely, least of all which classmates should be included in the formal grouping that the class constitutes. It is, however, not impossible to change classes or schools, for example in the wake of a pupil being subjected to bullying (which appears by no means to be an unusual solution when repeated acts of degrading treatment have escalated to an apparently unmanageable level for the school leadership). A qualified guess says that this is an administratively simpler solution compared to dealing with a complex bullying issue where intra- and interpersonal mechanisms in a social context interact with one another in a specific, disadvantageous manner for the victim. The discomfort or inconvenience (ill health) and the sense of shame that the individual pupil may experience as a result of being subjected to degrading treatment (Lindberg & Johansson, 2007) is hardly eased by compulsory school attendance, which is also linked to the administrative system and which, without exception, obliges all pupils to attend school.

Where pupils are concerned, school is not solely an administrative educational arena in which they are expected to perform in an academic sense. School is also a social arena where pupils enter informal systems which exist alongside the administrative systems and through which pupils organize themselves into various groupings. In other words, pupils are not solely expected to deliver academically. Pupils devote a large part of their school time guarding their social positions vis-à-vis classmates and others pupils at the school. Social relations during breaks is important.

> The formation of informal groupings in all social contexts is part of the elementary forms of social life. When pupils engage in such processes, one can, to borrow a term from Wrethander (2007, p. 109), call it the *pupils' relational work* – an ongoing task concerning the organization and regulation of social life in the context of a complex peer/youth culture. When pupils' relational work is conducted under stressful conditions in a turbulent environment, bullying behaviour is not rarely resorted to as a strategy for initially establishing dominance in the informal groupings (Flygare & Johansson, 2016, p. 7 f).

The day-to-day situation for pupils is stressful. The struggle to acquire knowledge (within the administrative system) and favourable social positions (within the informal systems) is an exhausting business. Those who fail in the latter respect often have low status in the pupil group.

Their low power of attraction means that they do not make the grade as company and that they may easily become victimized. Thus who, or which pupils, are victimized has a lot to do with who they associate with and who they do not associate with. For some, the pupils' on-going relational work means that new bonds of friendship are formed while old ones are broken. In that the balance of power in the regulation of informal groups may change, those persons who find themselves in dominant or subordinate positions respectively may also change over time. That pupils shift their social positions in this manner helps explain why pupils victimized at different times are only partly the same persons (Swedish National Agency for Education, 2011). In other words, a pupil who suffers bullying for a certain period of time may at a later point have changed his/her "bullying status" by means, for example, of belonging to those who are not (or no longer) victimized.

Given that previous research results have shown that bullying has negative consequences for the individual's health and well-being in both the long and short term, we hypothetically assume that bullying thereby also affects school work in the short and long term. This empirically testable assumption rests on the idea that the consequences of being involved in bullying undermine the ability to take advantage of the teaching provided, thus obstructing the prospect of obtaining satisfactory grades. An aggravating circumstance in empirically treating bullying as a risk factor in relation to fail grades is that disregarding the dynamics of pupils' "bullying status" over time may lead to the underestimation of the effect of bullying on their academic achievements. This risk is considerable when one only has data from one and the same period of time. Let us exemplify this with bullied pupils: Given that a certain percentage of pupils were bullied in 2012 and 2013 but were no longer bullied in 2014, and that the data set concerning bullying and grades comes from 2014, there is a risk that the relation between bullying and grades may be underestimated. In this study, we have access to data from different times and can therefore get a more reliable result in the above respect. We investigate, among other things, if experience of involvement in bullying at any time during the measurement period (three years) represents a risk factor in relation to academic achievements in the form of pass grades in the basic subjects, this in a context where the administrative system, by means of compulsory school attendance, forces the return of victims who have been outcast temporarily or for prolonged periods from the pupil group's informal systems, with all that implies concerning restrictions on social relations.

Method

The following study is based on quantitative data collected in a medium-sized Swedish municipality. The study is longitudinal and makes use of individual-level data, meaning that individual pupil's experiences can be tracked over time. All pupils in the municipal primary schools, grades 4 to 9, responded to a questionnaire on three occasions (2012, 2013, 2014). The questionnaire consisted questions concerning a number of areas in the pupils' lives including their subjection to degrading treatment, absenteeism, their general state of mind, security and well-being at school, their relationship with teachers, peer group and so on. In addition to the material from the questionnaire, the pupils' grade sets from the same period, i.e. 2012, 2013, 2014 (see below) were collected. School-level data obtained from the Swedish Agency for Education (SIRIS) databases concerning student and staff statistics, as well as parents' educational background for the 2013/14 school year have additionally been used. The study is approved by the Regional Ethics Review Board in Uppsala (Diary no. 100/339).

Procedure

The guardians of all pupils received information about the purpose of the study and were asked to fill in a form if they did not wish their children to take part (passive consent) and return it in a pre-paid envelope. The pupils gave their answers to a web-based questionnaire during school time on the following three occasions: March-April 2012 (Measuring point 1), March-April 2013 (Measuring point 2) and March-May (Measuring point 3). Teachers administered and monitored the filling out of the questionnaire. Each teacher was given clear written instructions concerning how they were to go about administering the survey on each occasion. Persons from the research group were present before, during and after each session to answer any questions from teachers or pupils. The teachers instructed the pupils to sit still and to answer the questionnaire in silence. Pupils who did not want to fill in the questionnaire or who were finished before the designated time was over were instructed to remain seated and find other work to do on their computer. Completion of the questionnaire took approximately 30 minutes. Each pupil was given an individual letter giving their log-in details as well as general information about the project and key ethical guidelines such as that their answers would be treated confidentially and that completion of the questionnaire was voluntary. The letter also contained information about various support organizations, both locally and nationally, to which the pupil could turn if he or she was being bullied or otherwise feeling bad. Pupils who were absent during the session had their letter sent home so they could complete the questionnaire on their own.

Sample

The study's sample consists all pupils who attended grades 4 to 9 in municipal schools in a medium-sized Swedish municipality. Each pupil was provided with a unique ID-code, making it possible to follow every pupil's development over time. In 2012, when the first wave of data collection was conducted, 44 municipal primary schools took part; in 2014, when the last wave was conducted, 34 took part. At Measuring point 1 (2012), the response rate was 77% (n = 4,950, 47% girls); at Measuring point 2 (2013) 82% (n = 5,078, 48% girls) and at Measuring point 3 (2014) 57% (n = 3,241, 48% girls).

Material

The empirical material consists, among other things, of self-reported data from school pupils. The questionnaire to which the pupils gave their answers consisted a host of questions, all of which, in different ways, touched upon the pupils' experience of going to school.

Victim – subjected to bullying

In order to measure bullying victimization, a set of questions previously employed in studies of bullying victimization among Swedish pupils was used (see Flygare, Gill, & Johansson, 2013; Hellfeldt, 2016: Swedish National Agency for Education, 2011a, 2011b). Accordingly, pupils are categorized as victims if, during the last few months, they have been repeatedly subjected to one or more negative actions where the intention was to hurt or scare. To this end, pupils used a five-level Likert scale ('1' Never to '5' Almost every day) to evaluate the extent to which, over the last two months, they had been hit/kicked; mocked, teased or called mean things face-to-face or via the internet, mobile or e-mail; frozen out / made pariah; been subject of the spread of unpleasant rumours; molested sexually by other pupils and if teachers or other school staff have said mean or unpleasant things to the pupil. They also got to answer what they thought the purpose behind the action to be. Pupils were categorized as *victims* of bullying if they had experienced one or more of these negative actions during the last two months and under condition that these actions had been:

- Repeated almost every day, a few days a week or a few times a month
- According to the pupil's perception, carried out with the intention of hurting or scaring the victim

Bully – subjected others to degrading treatment and/or bullying and bully/victim

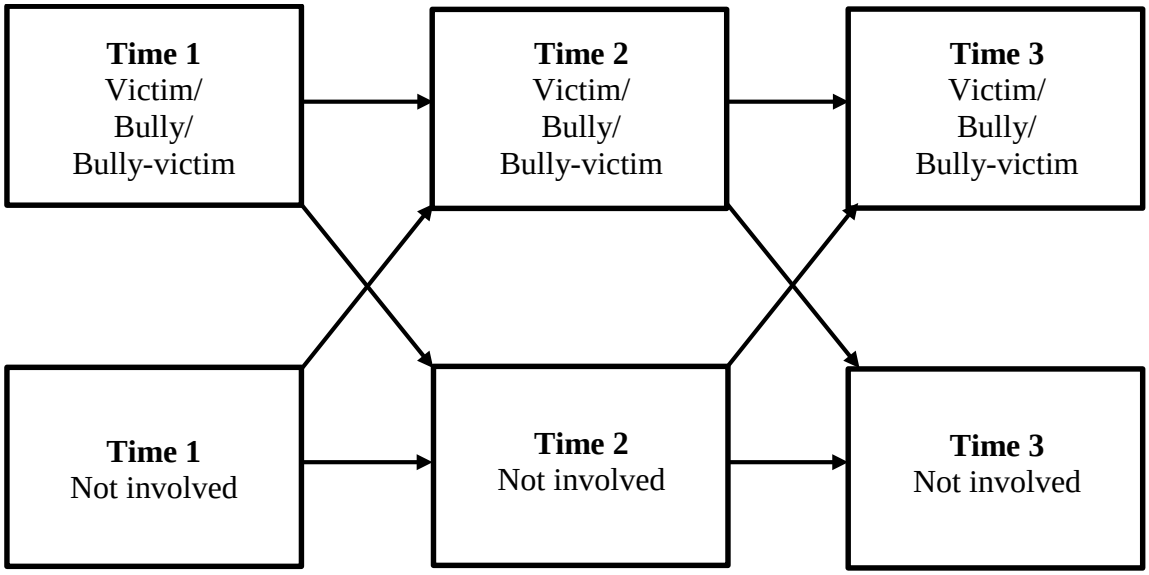
The difficulties of obtaining reliable information about undesirable social behaviour on the basis of self-reported data have been generally recognized for several decades (see, for example, Cook & Campbell, 1979). Instead of answering questions truthfully about one's own

behaviours that challenge moral norms, many tend to give socially acceptable answers, the consequence being that the outcome is affected by hidden figures. In an attempt to combat this, where bullies are concerned, we have included those who answered that they have *at some time* subjected other pupils to degrading treatment such as mocking, for example (see above). We believe quite simply that it is easier to admit to having behaved culpably on single occasions than to confess to repeatedly abusing other people. The inclusion criteria for the bully category have thus been broadened so that the category does not just include pupils who have bullied others (i.e. who have subjected others to degrading treatment on repeated occasions). This broadening of the bully category strikes a chord with the 'zero vision' for bullying in schools. Pupils who subjected other pupils to negative actions on single or repeated occasions have thus been classified as *bullies* and pupils who answered that they have both subjected others and have been subject themselves to bullying (in accordance with the above) have been classified as *bully-victims*.

Trajectories and victim/bully profiles

Given that the collected empirical data consists longitudinal individual-level data, there are good prospects for researching how changes in the incidence of degrading treatment and bullying over time occur and how they relate to pupils' academic performance. The figure below illustrates all imaginable trajectories for the incidence of degrading treatment and bullying and serves as a starting point for some of the analyses.

FIGURE 1: Individual development paths



Depending on the type of behaviour that is focused on or what time span is relevant, specific states at one time or different trajectories / profiles will be relevant in different analyses. The aim of this means of approach is to gain knowledge of how pupils' academic performance is affected by any involvement in bullying as a victim, bully or bully-victim both in the long and short term.

Absenteeism, social relations during breaks and support from teachers

Beyond the questions relating to bullying and/or degrading treatment, we have used the questionnaire to explore how other factors such as *absenteeism, social relations during breaks* and *how pupils perceive their teachers* affect grades and the school situation.

Absenteeism. The issue of absenteeism or truancy has been studied on the basis of the question as to whether, in the last two months, one has stayed home from school without being ill/having authorized absence. Pupils who answered that they were absent (irrespective of frequency) have been noted as having absenteeism.

Social relations during breaks. Pupils' opportunities to enjoy social relations during breaks has been investigated by means of a question where they are asked to consider the extent to which the following statement was correct: I have been able to be with others during breaks when I wished to do so. In an attempt to identify individuals within the pupil group who were more uncertain, relatively speaking, of their power of attraction, those pupils who chose answers ”not at all”, ”poorly” or ”partly” were put together in a new category called ”partly – not at all” in order to be able to compare them in a clearer manner with the pupils who answered that the statement corresponds ”completely” or ”well”.

Relation to teachers. In order to investigate how pupils perceive their teachers, pupils were given a five-level scale – ”not at all”, ”poorly”, ”partly”, ”well”, ”completely” – to evaluate the extent to which they agreed with the following four statements: 1) I feel I can trust my teacher if I have anything personal I want to tell them, 2) I feel that my teachers care about me, 3) The teachers treat me and my classmates fairly 4) The teachers treat me and my classmates with respect. The four questions were combined in a collective scale, given the name ’support from teachers’, to evaluate pupils’ perceived support from their teachers (Cronbach’s alpha 0.87). Those pupils with a value below 3 on the new scale, which may be taken to be equivalent to the response alternatives ”corresponds not at all” or ”corresponds poorly” are considered to experience a low level of support from their teachers. Pupils with value 3 and above on the new scale are considered to experience higher levels of support from their teachers.

Contextual factors at the school level

The analyses also make use of school-level information obtained from the Swedish National Agency for Education’s databases (SIRIS) in relation to pupil and staff statistics and parents’ educational background. The information taken into account is (a) *the percentage of female teachers*, (b) *the percentage of (full-time) teachers with a college degree in pedagogy*, (c) *the percentage of (full-time) teachers with a college degree in special needs pedagogy*, (d) *the number of pupils per (full-time) teacher*, (e) *the percentage of pupils with parents with higher education* and (f) *the percentage of pupils from foreign backgrounds.* Foreign background means that the pupil was born abroad or has parents who were both born abroad. In the Swedish National Agency for Education’s statistics, pupils lacking a social security number are counted in the category ’pupils from foreign backgrounds’. The lack of a social security number may indicate that that the pupil is not registered in Sweden. Other pupils are categorized as having a Swedish background, including those with one parent born abroad.

Grades

Where the data relating to grades in the basic subjects English, Mathematics and Swedish (or Swedish as a second language) is concerned, this was provided by the school administration in the municipality from which the pupil data originates. The information about grades in basic subjects varies from year to year and between school years at different times. A few examples: At T3 (2014), there is information about grades for pupils in school years 6-9. At T1, these pupils were in school years 4-7 but at this time, that is to say 2012, no data concerning grades was reported for pupils in school years 4-7. At T2 (2013), data relating to grades is lacking for school years 4 and 5. The reason behind the varying data relating to grades is to do with the

transition to the new grading scale (see above). Owing to the above, variables that measure bullying vis-à-vis academic performance in the basic subjects cannot be studied in relation to one another at different times. The grades variable that we focus on concerns grades in the basic subjects for 2014, which is the year in which all the pupils in the studied cohort received grades.

The number of pupils which participated at all measuring points and which are included in the pupil cohort studied amounts to 1,737 (918 boys and 819 girls). At T3, these pupils were distributed on school-year basis as follows: Grade 6 (n=440), Grade 7 (n=487), Grade 8 (n=399) and Grade 9 (n=411).

Outcome measures: relative risk values and odds ratios

The current study investigates, inter alia, whether experiences of bullying (as a victim, bully or bully-victim), absenteeism and poor opportunities for social relations during breaks constitute risks in relation to obtaining fail grades. The independent variables are thus designated in terms of risk factors. Since the content of each is of a different character, we can say that we are investigating if, and if so to what extent, academic performance in the form of grades is influenced by various types of risk factor.

Within medical research, the outcome measure *relative risk* (RR) is used, for example, to evaluate the effect a treatment has on a group of patients (the experiment group) compared with another group of patients with the same symptoms who receive instead a placebo preparation (the control group) or to analyse the risk of developing an illness without treatment in comparison with receiving treatment. Here, the outcome measure relative risk is used to describe the risk factors' univariate effects on grades. Risk factors with the greatest effect within each respective type are then investigated collectively in multivariate analyses. For this purpose, where a set of variables is analysed in a block, logistic regression analysis is used (*Forced Entry Method*). Logistic regression analyses the relationship between a binary outcome or an 'event' and one or more independent variables that may be dichotomous, categorical or continuous (Caria & Galanti, 2012). Logistic regressional analysis calculates the logarithm of the odds for a certain outcome to occur. These are presented as β-coefficients indicating how much the logarithm of the odds (the logit) changes when the independent variables increase by one unit. More precisely, one can say that the logit is the dependent variable in a logistic regression. "*However, logistic coefficients are difficult to interpret in their original form because they are expressed in terms of logarithms when we use the logit as the dependent measure. Thus, most computer programs also provide an exponentiated logistic coefficient, which is just a transformation (antilog) of the original logistic coefficient*" (Hair et al. 2010, s. 422). The

exponentiated β-coefficient, Exp(B), or *odds ratio* (OR) as it is also called, is the outcome measure we generally work from to evaluate the respective risk factors' relative effect on grades while holding all other risk factors in the model constant. With the aid of the odds ratio, we can identify the factors that influence the odds of obtaining fail grades to an extent that is unlikely to be explained by chance. To put it another way, using the odds ratios that are executed in the logistic regression, we are able to examine the unique contribution of each of the risk factor entered into the model, while controlling for the other risk factors influence within the same model.

The distinction between relative risk and odds ratios is exemplified below on the basis of data from the current study. Among pupils who were bullied at least at some time during the period T1-T3, the percentage obtaining fail grades in the basic subjects (at T3) was 20.1%. The corresponding percentage for pupils who were not victimized during the same period was 11.5%. To be more exact, the proportions were 0.2014 and 0.1148 respectively; we mention this in order to more easily illustrate the calculation of relative risk and odds. The relative frequencies, 20.1% and 11.5% respectively, specify the risk (risk value) or incidence of fail grades in the different pupil groups – or the likelihood (probability) that the event – fail grades – should occur. The disparity in risk between the groups can be expressed by dividing the risk category's (bullied pupils) risk value by the risk value of the opposite group (non-bullied pupils), from which a risk ratio, given the name relative risk (RR) is obtained. On the basis of the above data, the relative risk was 1.754 (0.2014/0.1148=1.754). The result, which was significant, may be read as the risk of obtaining fail grades in the basic subjects is 75% higher among bullied pupils than non-bullied pupils, or that the risk of fail grades is 1.75 times larger for pupils subjected to bullying.

While the probability of an event is defined as its relative frequency, the odds are defined as the probability of an event, P(E), divided by its opposite, 1 – P(E). From what we have already seen above, we know that the probability of fail grades among pupils subjected to bullying is 0.2014. In this case, the probability of its opposite is equal to 1 minus this figure, that is to say 1 – 0.2014=0.7986. Thus the odds of fail grades for bullied pupils is 0.2521 (0.2014/0.7986). The odds of fail grades for non-bullied pupils is: 0.1148/(1 – 0,1148)=0.1148/0.8852=0.1296. By dividing the risk category's odds value by the odds value of the opposite group, the odds ratio (OR) is obtained, which in this case is 0.2521/0.1296=1.9452. The outcome may be interpreted such that the odds of fail grades is 1.94 times higher among bullied pupils than among non-bullied pupils. Note that this applies when the risk factor is analysed alone and all other risk factors in the model are held constant.

For lower risk values, the odds ratio may be considered an approximation of the corresponding risk ratio. When the pooled risk ratio of the compared groups exceeds 15%, (compared groups' incidence and number of participants merged), the OR value starts to deviate noticeably from the RR value, and the odds ratio as an approximation of the corresponding risk ratio may also be challenged (see Egger, Smith & Altman, 2001, figure 2.1, p. 31). In the pupil cohort studied, the risk value, i.e. the percentage with incidence of fail grades was 12.8%. For bullied pupils, the RR was 1.754 (rounded up to 1.8) while the OR was 1.9. This indicates that the odds ratio (OR), with a certain degree of caution, may be considered an approximation of the corresponding risk ratio (RR).

Identifying underlying patterns

The closing section uses Configural Frequency Analysis (CFA) to explore and identify underlying patterns in the data and combinations of variable values (configurations) in the studied population that deviate significantly from the general pattern. In brief, CFA identifies configurations that occur significantly more (types) or significantly less (antitypes) than what one might expect from the influence of chance alone.

In connection with the CFA analysis, the SPSS Decision Tree (CHAID) is used to deepen the understanding of what characterizes or determines (predicts) belonging to the types that the CFA analysis results in. The procedure creates a tree-based classification model where consideration is given to the specific variable from a set of independent variables. A more detailed description of the analytical methods follows later.

Results

The results section is divided into different parts where the analysis of the influence of different factors on pupils' academic performance is further elaborated. Initially, an account is given as to how pupils' experiences of bullying, absenteeism and opportunities for social relations during breaks are related to pupils' possibilities of achieving pass grades in the basic subjects Mathematics, English and Swedish (or Swedish as a second language) at the aggregated level. Underlying patterns in the population are then examined with the purpose of deepening understanding as to which factors influence pupils' academic achievements at the individual level. Finally, an account is given as to how pupils' experience of bullying influences their experience of support from teachers.

Grades, bullying, absenteeism and opportunities for social relations during breaks

In this part of the study, the influence of individual risk factors on grades are reported using relative risk values (RR). These values denote how much higher the likelihood of the incident category 'fail grade in the basic subjects' (English, Mathematics and Swedish) is for pupils who belong in the following risk categories compared to those who do not, the risk categories being: subjected to bullying (victim), exposed others to degrading treatment and/or bullying (bullies), been involved as victim and/or bully (experience of some form of bully/victimhood), had absence from school and estimated the prospect of being able to be with someone during breaks as small at T1, T2 and T3, including *at any time* during the periods T1-T2 or T1-T3 respectively. We start this section by first giving an account of how common the incident category and risk categories are in the studied pupil cohort.

Grades in the basic subjects

Administratively, a pupil's ability is assessed on the basis of his/her academic performance, this in turn providing the basis of an overall assessment in the form of pass or fail grades in various subjects. Here it is grades from 2014 in the basic subjects English, Mathematics and Swedish (or Swedish as a second language) that constitute the target variable; more specifically, it is the incidence of obtaining fail grades in the basic subjects which is the point of focus. In the cohort studied, the percentage of pupils with fail grades in 2014 was 12.8% (n=1736); 14.9% among boys (n=914) and 10.5% among girls (n=818).

Victim – subjected to bullying

In the social arena, pupils may be regarded as suitable or unsuitable as friends. One factor that indicates what the case is at a certain point in time is whether or not the pupil is bullied by other pupils. Pupils may also be repeatedly exposed to degrading treatment from adults at the school,

which, in turn, may serve to legitimize bullying among pupils (Swedish National Agency for Education, 2013). In the current study, and on the basis of a set of questions concerning whether one (as a pupil) has been victimized by other pupils or school personnel (see above), we constructed a number of variables which were used to assess pupils' bullying victimization at various measuring points (points in time) or at any time during a given period (at more points in time) respectively.

In the cohort studied, the percentage of pupils victimized at T1 amounted to 6.4%. At T2, the figure was 7.1% and at T3, 6.9%. It is not the case, however, as one might easily be led to believe if only considering the prevalence of bullying victimization at the various measuring points, that victimization involved the same pupils over the course of time. The table below exemplifies this with data from pupils at T1 and T2.

TABLE 1: Subjected to bullying at T1 and T2, row percentage (and total percentage)

		Victimized at T2		Total
		Yes	No	
Victimized at T1	Yes	28	84	112
		25.0 % (1.6 %)	75.0 % (4.8 %)	100.0 % (6.4 %)
	No	95	1530	1625
		5.8 % (5.5 %)	94.2 % (88.1 %)	100.0 % (93.6 %)
Total		123	1614	1737
		7.1 % (7.1 %)	92.9 % (92.9 %)	100.0% (100.0 %)

Of those pupils who were bullied at T1, 25% were still bullied at T2. This constitutes 1.6% of the pupil group in the studied cohort. The three quarters of the pupils who were bullied at T1 but no longer bullied at T2 may be said to have obtained an improved situation at T2. This group of pupils constitutes 4.8% of the cohort. At the same time, 5.5% of pupils had a worse situation, i.e. from not being bullied at T1 to being bullied at T2. These types of changes, which indicate that pupils' social positions fluctuate over the course of time, are easily overlooked if one does not have access to individual-level data.

When pupils' victimization (if any) at T3 is woven in with the results from the first and second measuring points, the picture becomes even more complex as the pupils may then (i.e. after the measurement period's end) be categorized according to eight different trajectories. In Table 2, below, these are described in terms of 3-digit letter combinations where the first 'V' or the first

'N' corresponds with pupils who were bullied (*Victims*) or not bullied (*Non-Victims*), and the second and third letters represent the case at T2 and T3 respectively.

TABLE 2: Change in trend: pupils' bullying victimization T1-T3

		Bullied at some time during the period T1-T3		
Wave	123	Frequency	Valid Percentage	Cumulative Percentage
	VVV	14	0.8	0.8
	VVN	14	0.8	1.6
	NVV	32	1.8	3.5
	VNV	8	0.5	3.9
	VNN	76	4.4	8.3
	NVN	63	3.6	11.9
	NNV	66	3.8	15.7
	NNN	1464	84.3	100.0
Total		1737	100.0	

The variable in the table above is presented in such a way that pupils not subjected to bullying at any of the measuring points have been placed in the row next to bottom. This pupil group (NNN) amounts to 84.3%. The other rows or letter combinations correspond to pupils who were bullied at one measuring point (VNN NVN, NNV), at two measuring points (VVN, NVV, VNV) or at all three measuring points (VVV). In the latter case, the percentage of the studied cohort which was victimized throughout the measurement period amounts to 0.8%. It is worth noting that the percentage of pupils bullied *at some time during the measurement period*, 15.7%, is more than double the prevalence at any of the individual measuring points (see bottom of the right-hand column in Table 2, which records the cumulative percentage, i.e. which adds the relevant row's valid percentage to the sum of all the higher rows' results).

As previously mentioned, 12.8% of pupils had fail grades in the basic subjects in 2014. The relative frequency varies at the school level depending on if the pupils attend schools where the percentage of bullied pupils is above or below the average for bullied pupils. A few examples: Among pupils attending schools where the prevalence of victimization was above average at the two last measuring points (n=341), the percentage of fail grades in 2014 was 15.2%. The corresponding percentage among pupils attending schools where the incidence of victimization was below average at the last measuring point (at T2 and T3) was 10% (n=609).

Bullies – subjected others to degrading treatment and/or bullying

The result shows that the percentage of pupils who subjected other pupils to degrading treatment and bullying at T1 amounted to 2.7%. At T2, the corresponding figure was 3.1% and at T3,

3.3%. As is similarly the case with bullied pupils, it is not the same individuals who are bullies over the course of time (ref. ”B” for ”bully” in the table below).

TABLE 3: Change in trend: pupils who subject others to degrading treatment and/or bullying T1-T3

	Bullies at some time during the period T1-T3		
Wave 123	Frequency	Valid Percentage	Cumulative Percentage
BBB	1	0.1	0.1
BBN	9	0.5	0.6
NBB	7	0.4	1.0
BNB	6	0.3	1.3
BNN	31	1.8	3.1
NBN	37	2.1	5.2
NNB	44	2.5	7.8
NNN	1602	92.2	100.0
Total	1737	100.0	

Only 0.1% (one pupil) was reported as a bully at all three measuring points (BBB). A considerably larger percentage, 7.8%, bullied others *at some time during the measurement period.* Around 2% reported they were bullies at the respective measuring points, with the lowest percentage (1.8%) at T1 and the highest (2.5%) at T3. This result also points at the dynamics of pupils’ ”bullying status”.

Bully/victimhood

With the purpose of evaluating the influence of degrading treatment in a wider sense on pupils’ academic achievements, we constructed a risk factor which measures *some form of bully/victimhood*. Pupils classified as included in the risk category have experience or being a victim or bully or both victim and bully at one or more measuring points. In the cohort studied, the percentage of pupils belonging to this risk category at T1 was 7.9%. At T2, it amounted to 9.2% and at T3, 9%.

The table below shows that 1% of pupils belonged to this risk category at all measurement points (these are described with three Ys as in ”Yes” – belonging to the risk category at waves 1,2 and 3).

TABLE 4: Change in trend: pupils who were subjected to bullying and subjected others to degrading treatment/bullying T1-T3

		Victim and bully at any time during the period T1-T3		
Wave	123	Frequency	Valid Percentage	Cumulative Percentage
	YYY	18	1.0	1.0
	YYN	21	1.2	2.2
	NYY	43	2.5	4.7
	YNY	18	1.0	5.8
	YNN	81	4.7	10.4
	NYN	78	4.5	14.9
	NNY	78	4.5	19.4
	NNN	1400	80.6	100.0
Total		1737	100.0	

Between 1 and 2.5% of pupils have been included in the risk category at two measuring points. If we look at the respective measuring points, about the same percentage had experience of some form of bully/victimhood on each occasion (4.7% at T1, 4.5% at T2 and T3). The percentage of pupils which had been involved in bullying as victim and/or bully at any time during the measurement period (T1-T3) was 19.4%.

Experience of bullying as victim, bully or both in relation to grades

Previous research has shown that impacts of bullying may differ depending on the pupil's experience of bullying (if any). Within the field of victimization research, four different pupil groups are usually distinguished, namely (a) non-involved pupils, i.e. pupils who are neither subjected to bullying nor bully others, (b) victims, i.e. those who are subjected to bullying, (c) bullies, i.e. those who bully others, and (d) those who are both bullied and subject others to degrading treatment and bullying (bully-victims). In studies relating to the consequences of bullying, pupils who both bully others and are bullied themselves (bully-victims) emerge as a group at particular risk where negative impacts of bullying are concerned. It is thus important, when investigating bullying in relation to academic performance, that not only victims or bullies are studied.

Table 5 reports the percentage of pupils in the four groups with pass grades and fail grades respectively in the basic subjects in 2014, and sub-divided into boys and girls. The table also shows which groups exhibit significant disparities vis-à-vis one another. The statistically significant disparities are marked with letters in the table. Of the pupils not involved in bullying, 89.1% achieved pass grades in the basic subjects, compared with 83.2% of the pupils subjected to bullying. In the bully group, the percentage was 75%, and in the bully-victim group 70%. The table also shows that the latter two groups exhibit significant disparities from both pupils

who were victims and those who were not involved in bullying. Pupils belonging to the not-involved and victim groups do not differ significantly from one another. The result also shows that the percentage of pupils with fail grades in the basic subjects is significantly higher among pupils who belong to the bully and bully-victim groups (25% and 29.6% respectively) compared with victims (16.8%) and those who were not involved in bullying (10.9%).

Table 5 also presents the outcome on the basis of pupils' gender. Where boys are concerned, they exhibit the same pattern as the group overall, i.e. boys with experience of being bullies or bully-victims exhibit significantly lower levels of pass grades (70.7% and 71.2% respectively) than boys who were not involved in bullying (86.9%). There is no significant disparity between boy victims and boys not involved in bullying where the percentage of pupils with pass grades in the basic subjects is concerned. Thus boys who were bullies or bully-victims are over-represented where the percentage of pupils with fail grades in the basic subjects is concerned compared with boys who were not involved in bullying. This also means that male bullies and bully-victims have a significantly higher fail grade percentage (29.3% and 28.8% respectively) compared with boys who have not been involved in bullying (13.1%).

TABLE 5. Experience of bullying in relation to grades

	Not involved (a)	Victims (b)	Bullies (c)	Bully-victims (d)
Grades in the basic subjects 2014	% (number)	% (number)	% (number)	% (number)
Pass grades in the basic subjects (total)	89.1 [c d] (1247)	83.2 (168)	75 (48)	70.4 (50)
Boys	86.9 [c d] (629)	84.7 (83)	70.7 (29)	71.2 (37)
Girls	91.5 [b d] (615)	81.7 (85)	82.6 (19)	68.4 (13)
Fail grades in the basic subjects (total)	10.9 (152)	16.8 (34)	25 [a] (16)	29.6 [a] (21)
Boys	13.1 (95)	15.3 (15)	29.3 [a] (12)	28.8 [a] (15)
Girls	8.5 (57)	18.3 [a] (19)	17.4 (4)	31.6 [a] (6)

Note: Letters in the table denote which column percentages are significantly different from one another. Comparison between columns is performed using a z-test; all comparisons are Bonferroni corrected.

Where girls are concerned, a different picture emerges. Where boys with fail grades in the basic subjects commonly had experience of being bullies, it is rather experience of being bullied that is common among girls who do not achieve pass grades. Among girls with fail grades, there was a significantly larger percentage that was victimized (18.3%) or belonged to the bully-victim group (31.6%) compared with girls who were bullies (17.4%) or who were not involved in bullying during the same measurement period (8.5%). In the group of girls who were never involved in bullying, 91.5% achieved pass grades, this being significantly higher than both girls who had been bullied (81.7% with pass grades) and girl bully-victims (68.4%). Summing this

up, it may be concluded that boys' and girls' experiences of bullying affect the possibility of approved grades in slightly different ways. In the case of boys, it appears to be 'bullyhood', i.e. belonging to bullies (group c) and bully-victims (group d) that leads to pass grades to a significantly lower extent, while for girls it appears rather to be experience of being bullied, i.e. victims (group b) and bully-victims (group d), that leads to pass grades in the basic subjects to a significantly lower extent. It is also particularly important to note that bully-victims is the group that exhibits the significantly largest percentage of fail grades among both boys and girls.

Absenteeism

At T1, the percentage of pupils reporting absence from school was 12.4%. At T2, the corresponding figure was 14.8% and at T3, 21.2%. Just as with the bullying variables, it is not all the same pupils who reported absence at the various measuring points. Of those who reported absence at the first measuring point, 60% did *not* report absence at the second; 3.1% of the pupils in the cohort reported absence at all measuring points (T1, T2 and T3). During the period T1-T2, around 22% reported absence at some time. The corresponding percentage for the period T1-T3 was almost 32%.

Opportunities for social relations during breaks

As regards pupils' own assessments of being able to be with someone during breaks, the result shows that a group of more than 7% at T1 and T2 respectively and 8% at T3 was made up of students who assessed that they had "partly-not at all" opportunities for this type of social relation. The percentage that gave the above assessment at both measuring points from T1 to T2 was 1.4%. The relative frequency of pupils who at all measuring points assessed their prospects of social relations during breaks as poor ("partly-not at all") was only 0.5%. During the same period, however, i.e. between T1-T3, almost 18% gave this assessment at some time, the corresponding percentage during the period T1-T2 being 13%.

The impact of individual factors on grades in the basic subjects

The following sections describe the isolated increased or decreased risk of individual factors on grades in the basic subjects in terms of relative risk values (RR) with associated confidence intervals (CI). We begin by reporting the risk of fail grades in 2014 in relation to bullying at different times, as well as in relation to bullying victimization during the T1-T2 and T1-T3 periods respectively. Put simply, the RR values in this case denote the risk of fail grades among bullied pupils in comparison with non-bullied pupils. Significant ($p < 0.05$) RR values above 1 correspond to a statistically significant increased risk and values below 1 a decreased risk for the outcome, i.e. fail grades in 2014.

Bullying victimization and grades

Of the risk factors listed in Table 6, *bullied at some time during T1-T3* is the one which has greatest significant impact (RR=1.754) on pupils' grades (boys and girls). This result may be interpreted in the following way: For pupils who have been bullied at some time during the measurement period, the relative risk of fail grades (at T3) is 75%. Alternative interpretations are as follows: The risk of fail grades is 75% higher among victims of bullying than non-victims; the risk of fail grades is 1.75 times higher for victims in comparison to non-victims. In the group of victimized pupils, the percentage with fail grades constitutes 20% (compared with 12.8% for the entire pupil cohort).

TABLE 6: Bullying victimization 2012, 2013, 2014 and Grades 2014

			For cohort fail grades 2014			
				CI		
	Percentage fail grades	*n* =	RR	Lower	Upper	*p*
Bullied T1 (2012)	19.60%	1736	1.587	1.068	2.359	0.026
Boys	20.60%	914	1.428	0.856	2.380	0.183
Girls	16.70%	818	1.645	0.845	3.205	0.152
Bullied T2 (2013)	21.10%	1736	1.731	1.201	2.495	0.004
Boys	18.50%	914	1.264	0.739	2.161	0.400
Girls	22.80%	818	2.378	1.406	4.019	0.002
Bullied T3 (2014)	20.00%	1736	1.624	1.110	2.377	0.015
Boys	17.60%	914	1.204	0.703	2.063	0.505
Girls	23.10%	818	2.389	1.390	4.105	0.002
Bullied at some time during T1-T2	20.30%	1736	1.714	1.266	2.320	0.001
Boys	18.80%	914	1.308	0.858	1.992	0.219
Girls	21.30%	818	2.334	1.486	3.667	0.000
Bullied at some time during T1-T3	20.10%	1736	1.754	1.332	2.311	0.000
Boys	19.50%	914	1.392	0.960	2.016	0.086
Girls	20.30%	818	2.316	1.515	3.539	0.000

Where the impact of bullying on boys' and girls' grades respectively is concerned, it is established that no RR values are significant for boys. The risk factor mentioned above, i.e. *bullied at some time during T1-T3*, returns a value that is almost statistically significant but the impact of chance at 8.6% (p=0.086) is somewhat too high in relation to the accepted maximum limit of 5 ($p<0.05$). Among girls who stated that they were bullied at some time during the same

period (T1-T3), the risk of fail grades in the basic subjects is twice as high (RR = 2.316) compared with girls who were bullied during the corresponding timespan.

The above results are based on all pupils in the cohort studied – irrespective of whether they attend schools which are more or less safe from a bullying perspective, i.e. have higher or lower levels of bullying rates at the school level. In order to obtain an idea of how experience of having been bullied during the measurement period (the highest risk factor for the entire pupil group) is related to the grades of pupils who actually attend schools with different levels of bullied pupils, the table below includes only pupils who attend schools where the bullying prevalence is below (n = 609) and above (n = 341) the average bullying prevalence of the last measurement year (at T2 and T3).

TABLE 7: Bullied at some time during the period T1-T3 at schools with high and low rates of bullied pupils respectively and Grades 2014

			For cohort fail grades 2014			
				CI		
	Percentage fail grades	*n* =	RR	Lower	Upper	*p*
Bullied at some time during T1-T3, schools: victimization > x in the latest year	24.2%	341	1.852	1.097	3.127	0.024
Boys	20.0%	167	1.148	0.537	2.453	0.724
Girls	29.0%	174	3.194	1.499	6.801	0.002
Bullied at some time during T1-T3, schools: victimization < x in the latest year	21.5%	609	2.592	1.561	4.305	0.000
Boys	19.0%	340	2.102	1.024	4.318	0.046
Girls	22.2%	267	3.020	1.407	6.479	0.004

It is noteworthy that the risk of fail grades is higher among victimized pupils attending schools where the bullying rate was below average for the last measurement year compared with schools where the bullying prevalence was above average (especially among boys). At these schools, the risk of fail grades is 2.6 times higher among victims than among non-victims (RR=2.592). This coincides with the increase in risk as a consequence of bullying at these schools being statistically significant for both boys and girls. For boys bullied at some time during the measurement period, the risk of fail grades in the basic subjects is twice as high as among non-bullied boys (RR = 2.102). For bullied girls, the risk is 3 times as high as for non-bullied girls (RR = 3.020). When the above results are compared with pupils attending schools where the

bullying prevalence exceeds the average of the last measurement year, the relative risk is slightly higher for bullied girls than for non-bullied girls (RR = 3.194) while the impact of bullying on grades is not significant among boys.

One possible reason for the higher RR for bullied boys in schools with lower bullying rates is, first of all, that they are more easily identified by others because they have been subjected to physical bullying to a relatively large extent (repeatedly being pushed, hit, kicked, held down, been threatened with hitting etc.). Among boys who go to these schools and who have been bullied at some time during the measurement period, 46% have suffered physical bullying, compared with 28% of bullied girls. The gender differences regarding physical bullying is striking. On the other hand, the percentage subjected to social bullying, e.g. being made pariah, frozen out or exposed to the spread of mean rumours, is relatively similar between the sexes: 77% among boys and 80% among girls. The gender difference regarding physical bullying is also marked in comparison with schools where the bullying prevalence is above average. Of pupils attending those schools, and who reported being bullied more or less frequently between 2012 and 2014, the percentage of those subjected to physical bullying during the measurement period is almost the same between boys (45%) and girls (43%). At schools with higher rates of physical bullying, it is easier for victims, both boys and girls, to disappear in the crowd. At schools with lower bullying rates, it is more difficult for victims to avoid being noticed. Being thus singled out as a victim by means of physical abuse in a social context where the majority feel safe in their peer relationships can additionally undermine the desire for schoolwork. At schools where the bullying prevalence is below average, a relatively large proportion of boys with experience of being bullied at some time exhibit a disinclination to attend school. The figures in parentheses below denote the corresponding percentages for girls at the same schools with the same bullying history. On the question as to whether boys (girls) look forward to going to school, 36% (27%) answered ”No”, 39% (47%) answered ”Both yes and no” and 25% (27%) answered ”Yes”. The corresponding percentages for non-bullied boys (girls) were 13% (10%), 51% (52%) and 36% (39%) respectively. The association between the variables is significant among both boys (χ^2 (2, n=313) = 12.319, p=0.002) and girls (χ^2 (2, n=257) = 8.029, p=0.018).

In order to deepen the understanding of how bullying victimization during the measurement period affects grades, other contextual factors at school level have also been taken into consideration. In this study, contextual factors refers to organizational and personnel resources as well as preconditions in the pupil group. The contextual factors being studied are as follows: (a) the percentage of female teachers, (b) the percentage of (full-time) teachers with a college degree in pedagogy, (c) the percentage of (full-time) teachers with a college degree in special

needs pedagogy, (d) the number of pupils per (full-time) teacher, (e) the percentage of pupils with parents with higher education and (f) the percentage of pupils from foreign backgrounds.

The risk of fail grades was higher among victimized pupils attending schools where *the percentage of female teachers* was *above* the national average during the school year compared with schools where the proportion of female teachers was below the national average (especially among boys). At these schools, the risk of fail grades was closer to 4.2 times higher among pupils who had been bullied than among those who had not (RR = 4.227). This coincides with the increase in risk as a consequence of bullying being very noticeable among boys. For boys who were bullied at some time during the measurement period, the risk of fail grades in the basic subjects is nearly eleven times higher compared with non-bullied boys (RR=10,846).

Where the educational level of teaching staff was taken into consideration, the risk of fail grades for bullied pupils was similar in schools where the *percentage of teachers with a college degree in pedagogy* was lower (RR = 1.859) and higher (RR = 1.757) than the national average. At schools with a lower percentage of teachers with a college degree in pedagogy, the risk of fail grades was twice as high for bullied boys compared with non- bullied boys. At schools with a higher percentage of teachers with a college degree in pedagogy, the risk of fail grades was twice as high for bullied girls compared with non-bullied girls. This factor thus appears to impact girls and boys differently.

The pattern regarding the percentage of teachers with a college degree in special needs pedagogy is different. The risk of fail grades was higher among bullied pupils attending schools where the *percentage of teachers with a college degree in special needs pedagogy was above the national average* (RR=2.615) compared with schools where the percentage was below the national average (RR=1.450). However, the risk of fail grades for bullied girls in the latter category of school was 2.5 times as high compared with non-bullied girls.

TABLE 8: Bullied at some time during T1-T3 in relation to Grades 2014, taking into account organizational and personal resources at school level

			For cohort fail grades 2014			
				CI		
	Percentage fail grades	*n* =	RR	Lower	Upper	*p*
Bullied at some time during T1-T3, school level - percentage of female teachers *below* the national average, school year 2013/14	19.5%	1621	1.651	1.236	2.206	0.001
Boys	16.9%	854	1.156	0.766	1.747	0.493
Girls	21.9%	763	2.497	1.631	3.823	0.000
Bullied at some time during T1-T3, school level - percentage of female teachers *above* the national average, school year 2013/14	27.3%	115	4.227	1.506	11.862	0.004
Boys	46.2%	60	10.846	2.475	47.539	0.000
Girls	0%	55	-	-	-	0.358
Bullied at some time during T1-T3, school level – percentage of teachers with coll.deg. in ped. *below* the national average, school year 2013/14	30.0%	294	1.859	1.072	3.322	0.034
Boys	38.1%	157	2.072	1.082	3.970	0.039
Girls	21.1%	137	1.553	0.581	4.148	0.391
Bullied at some time during T1-T3, school level – percentage of teachers with coll.deg. in ped. *above* the national average, school year 2013/14	18.5%	1442	1.757	1.281	2.410	0.001
Boys	16.4%	757	1.258	0.810	1.954	0,311
Girls	20.2%	681	2.589	1.612	4.159	0.000
Bullied at some time during T1-T3, school level – percentage of teachers with coll.deg. in spec. ped. *below* the national average, school year 2013/14	18.0%	1116	1.450	1.019	2.064	0.042
Boys	16.5%	584	0.992	0.615	1.601	0.975
Girls	20.0%	531	2.506	1.462	4.294	0.001
Bullied at some time during T1-T3, school level – percentage of teachers with coll.deg. in spec. ped. *above* the national average, school year 2013/14	17.0%	361	2.615	1.259	5.430	0.009
Boys	17.9%	198	2.530	0.965	6.631	0.059
Girls	12.5%	160	2.125	0.606	7.446	0.237
Bullied at some time during T1-T3, school level – teacher density – number of pupils per teacher *above* the national average, school year 2013/14	18.4%	1521	1.736	1.275	2.363	0.001
Boys	16.8%	799	1.336	0.868	2.054	0.193
Girls	19.5%	718	2.310	1.461	3.651	0.000
Bullied at some time during T1-T3, school level – teacher density – number of pupils per teacher *below* the national average, school year 2013/14	35.7%	215	2.024	1.127	3.635	0.026
Boys	38.9%	115	1.640	0.831	3.238	0.178
Girls	30.0%	100	2.700	0.888	8.214	0.092

Where *teacher density* (the number of pupils per teacher) is concerned, the analysis shows that the risk of fail grades was higher among victimized pupils who attended schools where the

teacher density was *above the national average* (the number of pupils per teacher was lower than the national average) (RR=2.024) compared with schools where it was below the national average (RR=1.736). However, there is no difference between the genders at schools with higher teacher density but a lower teacher density especially affects girls, where the risk of fail grades was 2.3 times higher for victimized girls than non-victimized girls.

In what follows, we investigate the way in which factors linked to *preconditions in the pupil group* increase or decrease the risk of fail grades among victimized pupils. The risk of fail grades was higher among victimized pupils who attended schools where the percentage of *pupils with parents with higher education was above the national average* (RR=2.240) compared with schools where the percentage was lower than the national average. Under these preconditions, the risk of fail grades was twice as high for victimized boys that for non-victimized boys. For girls, the corresponding risk was 2.4 times as high. Closer investigation reveals that the risk of fail grades was higher for victimized girls than for non-victimized girls irrespective of whether the percentage of pupils with parents with higher education was below (RR=2.310) or above (RR=2.406) the national average.

TABLE 9: Bullied at some time during T1-T3 in relation to Grades 2014, taking into account preconditions in the pupil group at school level

			For cohort fail grades 2014			
				CI		
	Percentage fail grades	*n* =	RR	Lower	Upper	*p*
Bullied at some time during T1-T3, school level – percentage of pupils with parents with higher education *below* the nat. ave. school year 2013/14	23.3%	694	1.420	0.957	2.107	0.089
Boys	20.3%	378	0.998	0.576	1.729	0.995
Girls	27.3%	315	2.310	1.291	4.133	0.006
Bullied at some time during T1-T3, school level – percentage of pupils with parents with higher education *above* the nat. ave. school year 2013/14	18.2%	1042	2.240	1.518	3.303	0.000
Boys	18.9%	536	2.006	1.197	3.360	0.009
Girls	16.5%	503	2.406	1.309	4.421	0.005
Bullied at some time during T1-T3, school level – percentage of pupils from foreign backgrounds *above* the national average, school year 2013/14	20.9%	1125	1.471	1.067	2.027	0.021
Boys	18.9%	597	1.007	0.651	1.557	0.975
Girls	23.5%	527	2.552	1.564	4.164	0.000
Bullied at some time during T1-T3, school level – percentage of pupils from foreign backgrounds *below* the national average, school year 2013/14	18.6%	611	2.791	1.617	4.817	0.000
Boys	20.9%	317	3.823	1.786	8.186	0.000
Girls	14.3%	291	1.779	0.759	4.168	0.189

Where the *percentage of pupils from foreign backgrounds* is concerned, the analysis shows that the risk of failed grades for victimized pupils is higher at schools where the percentage of pupils from foreign backgrounds is below the national average (RR=2.791) in comparison with schools where the percentage of pupils from foreign backgrounds is above the national average (RR=1,471). Closer investigation shows that the risk of fail grades is 2.5 times higher for victimized girls at schools where the percentage of pupils from foreign backgrounds is above the national average compared to non-victimized girls. At schools where the percentage of pupils from foreign backgrounds is below the national average, the risk of fail grades is almost four times higher for victimized boys (RR=3.823) compared to non-victimized boys.

Bullied others and grades

Immediately below, an account is given of the risk of fail grades in relation to having subjected others to bullying/degrading treatment at different times and during different periods.

TABLE 10: Subjected others to degrading treatment/bullying 2012, 2013, 2014 and Grades 2014

			For cohort fail grades 2014			
				CI		
	Parentage fail grades	*n* =	RR	Lower	Upper	*p*
Bullies T1 (2012)	25.50%	1736	2.044	1.234	3.384	0.008
Boys	26.70%	914	1.842	0.996	3.405	0.065
Girls	18.80%	818	1.812	0.640	5.127	0.278
Bullies T2 (2013)	33.30%	1736	2.735	1.836	4.074	0.000
Boys	35.10%	914	2.505	1.570	3.998	0.000
Girls	25.00%	818	2.445	1.021	5.854	0.056
Bullies T3 (2014)	29.30%	1736	2.388	1.569	3.632	0.000
Boys	31.80%	914	2.269	1.428	3.604	0.001
Girls	21.40%	818	2.076	0.746	5.777	0.179
Bullies at some time during T1-T2	27.50%	1736	2.282	1.595	3.267	0.000
Boys	28.80%	914	2.070	1.341	3.196	0.002
Girls	22.60%	818	2.249	1.134	4.460	0.026
Bullies at some time during T1-T3	27.40%	1736	2.359	1.737	3.204	0.000
Boys	28.30%	914	2.112	1.460	3.055	0.000
Girls	23.80%	818	2.431	1.359	4.349	0.004

The girls' relative risk values are not significant at any single measuring point but only when considering them as bullies in the period between T1-T2 and between T1-T3 respectively. Of

these two risk factors, the latter has the greatest impact irrespective of gender. Among pupils (boys and girls) who have been *bullies at some time during T1-T3*, the relative risk is the same at 2.359. This may be interpreted as showing that the risk of fail grades in the basic subjects is just over twice as high for pupils who were bullies at some time during the measurement period compared with non-bullies during the same period. For boys and girls respectively with the same experiences (were bullies at some time during T1-T3), the relative risk is similar to the cohort as a whole because for them too it may be said that the risk of fail grades is about twice as high among both male and female bullies compared with pupils who did not subject others to degrading treatment or bullying during T1-T3; the percentage with fail grades is a little higher for male bullies (28%) than for female bullies (24%).

For girls who were bullies at some time during the measurement period and who attend schools where the bulling prevalence was above average in the last year measured year, the risk of fail grades is almost four times higher than for girl non-bullies (n=174, RR=3.971, CI=1.773 – 8.894, *p*=0.002). For boys who were bullies at some time during the measurement period and who attend schools where the bulling prevalence was below average at T2 and T3, the risk of fail grades was 2.8 times higher than for boy non-bullies (n=340, RR=2.852, CI=1.320 – 6.161, *p*=0,010).

The above establishes that contextual factors at the school level affect the risk of victimized pupils not achieving pass grades. In what follows, we will thus analyse if and in what way various factors linked to organizational and personnel resources and preconditions in the pupil group affect the risk of fail grades among those who subjected others to bullying and degrading treatment (bullies).

The risk of fail grades was higher among bullies who attended schools where *the percentage of female teachers* was *above the national average* for the school year compared to schools where the percentage of female teachers was below the national average (especially for boys). At these schools, the risk was almost 10.6 times higher among pupils who subjected others to bullying than for those who did not (RR=10.636). This coincides with the increase in risk as a consequence of ’bullyhood’ being particularly noticeable among boys. For boys who subjected others to bullying, the risk of fail grades was almost twenty times higher than for those who did not (RR=19.950). At schools where the percentage of female teachers was below the national average, the risk of fail grades for girls who bullied others was higher than for those who did not (RR=2.628). The corresponding risk among boys was around 1.7 times higher.

Where the educational level of teaching staff is concerned, the risk of fail grades for pupils who bullied others was somewhat higher at schools where *the percentage of teachers with a*

college degree in pedagogy was above the national average (RR=2,505) rather than lower (RR=1.892). At schools with a lower percentage of teachers with a college degree in pedagogy, there were no significant risks for boys or girls who bullied others. At schools with a higher percentage of teachers with a college degree in pedagogy, the risk of fail grades was almost three times higher for girls who bullied others than for girls who did not (RR=2.828). The corresponding risk figure for boys was 2.140.

Regarding the percentage of teachers with a college degree in special needs pedagogy, the pattern is reminiscent of that where victims are concerned. The risk of fail grades was higher among pupils who bullied others at schools where *the percentage of teachers with a college degree in special needs pedagogy was above the national average* (RR=7.106) compared with pupils at schools where the percentage was below the national average (RR=1.752). In the former category of schools, the risk of fail grades for male bullies was 8.5 times higher than for male non-bullies. For girls, the risk was over four times higher. The risk of fail grades for girls who bullied others at schools where the percentage of teachers with a college degree in special needs pedagogy was lower than the national average was 2.7 times higher than for girls who did not.

TABLE 11: Subjected others to bullying at some time during T1-T3 in relation to Grades 2014, taking into account organizational and personnel resources at school level

			For cohort fail grades 2014			
				CI		
	Percentage fail grades	*n* =	RR	Lower	Upper	*p*
Bullied at some time during T1-T3, school level – percentage of female teachers *below* national average, school year 2013/14	24.4%	1776	2.068	1.494	2.861	0.000
Boys	23.3%	928	1.671	1.109	2.519	0.018
Girls	25.0%	843	2.628	1.509	4.577	0.001
Bullied at some time during T1-T3, school level – percentage of female teachers *above* national average, school year 2013/14	63.6%	128	10.636	4.565	24.783	0.000
Boys	70.0%	67	19.950	4.820	82.581	0.000
Girls	0%	61	-	-	-	0.763
Bullied at some time during T1-T3, school level – percentage of teachers with coll. deg. in pedagogy *below* nat. ave., school year 2013/14	29.7%	317	1.892	1.076	3.328	0.034
Boys	35.0%	165	1.880	0.945	3.738	0.090
Girls	23.5%	152	1.869	0.712	4.906	0.218
Bullied at some time during T1-T3, school level – percentage of teachers with coll. deg. in pedagogy *above* nat. ave., school year 2013/14	26.6%	1587	2.505	1.774	3.537	0.000
Boys	26.2%	830	2.140	1.414	3.238	0.001
Girls	25.0%	752	2.828	1.429	5.598	0.004
Bullied at some time during T1-T3, school level – percentage of teachers with coll. deg. in spec. ped. *below* nat. ave., school year 2013/14	21.9%	1225	1.752	1.164	2.635	0.009
Boys	21.1%	641	1.323	0.813	2.154	0.270
Girls	24.0%	582	2.728	1.292	5.759	0.011
Bullied at some time during T1-T3, school level – percentage of teachers with coll. deg. in spec. ped. *above* nat. ave., school year 2013/14	45.0%	399	7.106	3.822	13.213	0.000
Boys	50.0%	216	8.500	3.864	18.697	0.000
Girls	22.2%	180	4.119	1.131	14.997	0.036
Bullied at some time during T1-T3, school level – teacher density – no. of pupils per teacher *above* national average, school year 2013/14	24.4%	1676	2.272	1.605	3.216	0.000
Boys	24.4%	871	2.005	1.311	3.065	0.002
Girls	22.2%	800	2.425	1.265	4.649	0.010
Bullied at some time during T1-T3, school level – teacher density – no. of pupils per teacher *below* national average, school year 2013/14	40.7%	228	2.408	1.392	4.168	0.003
Boys	44.4%	124	2.048	1.090	3.848	0.039
Girls	33.3%	104	2.879	0.979	8.462	0.068

Where *teacher density* (number of pupils per teacher) is concerned, the analysis shows that the risk of fail grades was somewhat higher among pupils who bullied others at schools where the teacher density was *above the national average* (the number of pupils per teacher was below

the national average) (RR=2.408) compared to schools where it was below the national average (RR=2.272).

The table below reports how *preconditions in the pupil group* increase or decrease the risk of fail grades among pupils who bully others. The risk of fail grades was higher for bullies who attended schools where *the percentage of pupils with parents with higher education was above the national average* (RR=3.223) than for those at schools where the percentage was *below* the national average (RR=1.721). Closer investigation shows that the risk of fail grades was 3.4 times higher for boys who bullied others than it was for boys who did not at schools where the percentage of pupils with parents with higher education was above the national average. At schools where the percentage of pupils with parents with higher education was below the national average, the risk of fail grades was higher for girls who bullied others than for girls who did not. We can thus establish that the percentage of pupils with parents with higher education affects boys and girls differently.

TABLE 12: Bullied others at some time during T1-T3 in relation to Grades 2014, taking into account preconditions in the pupil group at school level

			For cohort fail grades 2014			
				CI		
	Percentage fail grades	*n* =	RR	Lower	Upper	*p*
Bullied at some time during T1-T3, school level – percentage of pupils with parents with higher education *below* nat. ave., school year 2013/14	27.7%	755	1.721	1.122	2.641	0.017
Boys	24.4%	412	1.264	0.726	2.200	0.419
Girls	35.0%	342	2.818	1.451	5.473	0.004
Bullied at some time during T1-T3, school level – percentage of pupils with parents with higher education *above* nat. ave., school year 2013/14	27.2%	1149	3.223	2.144	4.846	0.000
Boys	30.9%	583	3.400	2.107	5.486	0.000
Girls	16.0%	562	3.020	2.096	5.392	0.132
Bullied at some time during T1-T3, school level – percentage of pupils from foreign backgrounds *above* the national average, school year 2013/14	26.4%	1239	1.882	1.328	2.668	0.001
Boys	20.0%	655	1.427	0.932	2.185	0.113
Girls	29.0%	582	2.909	1.589	5.325	0.001
Bullied at some time during T1-T3, school level – percentage of pupils from foreign backgrounds *below* the national average, school year 2013/14	30.0%	665	4.464	2.560	7.786	0.000
Boys	36.0%	340	7.087	3.492	14.385	0.000
Girls	14.3%	322	1.692	0.445	6.429	0.448

Where *the percentage of pupils from foreign backgrounds* is concerned, the analysis shows that the risk of fail grades for pupils who bullied others was higher at schools where the percentage of pupils from foreign backgrounds was below the national average (RR=4.464) compared to

schools where the percentage of pupils from foreign backgrounds was above the national average (RR=1.882). The result shows that the risk of fail grades was 2.9 times higher for girls who bullied others than for those who did not at schools where the percentage of pupils from foreign backgrounds was above the national average. At schools where the percentage of pupils from foreign backgrounds was below the national average, the risk of fail grades was seven times higher for boys who bullied others (RR=7.087) than for boys who did not. One possible interpretation of the result where factors linked to preconditions in the pupil group are concerned might be that abnormalities in the sense of being bullied or bullying others within an homogenous group means that the pupil is considered to be 'different' in a wider perspective and that that affects his/her possibilities of fitting in or of feeling a sense of belonging to the community. Put succinctly, the risk of stigmatization increases.

Bully/victimhood and grades

Regarding experiences of bully/victimhood, two risk factors stand out, namely *some form of bully/victimhood at T3* and *during the period T1-T3* respectively. For these risk factors, the relative risk values are significant for the cohort as a whole as well as for boys and girls.

TABLE 13: Bully/victimhood 2012, 2013, 2014 and Grades 2014

			For cohort fail grades 2014			
				CI		
	Percentage fail grades	*n* =	RR	Lower	Upper	*p*
Some form of bully/victimhood T1 (2012)	19.60%	1736	1.595	1.110	2.293	0.014
Boys	20.50%	914	1.429	0.896	2.280	0.144
Girls	16.90%	818	1.693	0.925	3.096	0.094
Some form of bully/victimhood T2 (2013)	21.90%	1736	1.834	1.329	2.531	0.000
Boys	21.70%	914	1.540	1.009	2.351	0.051
Girls	20.90%	818	2.180	1.302	3.648	0.004
Some form of bully/victimhood T3 (2014)	24.80%	1736	2.132	1.573	2.889	0.000
Boys	25.30%	914	1.847	1.255	2.718	0.003
Girls	24.20%	818	2.576	1.573	4.218	0.000
Some form of bully/victimhood during T1-T2	20.50%	1736	1.778	1.346	2.349	0.000
Boys	20.00%	914	1.437	0.993	2.081	0.059
Girls	20.40%	818	2.278	1.475	3.516	0.000
Some form of bully/victimhood during T1-T3	21.10%	1736	1.939	1.502	2.503	0.000
Boys	21.60%	914	1.645	1.183	2.286	0.004
Girls	19.90%	818	2.342	1.555	3.527	0.000

For the cohort boys and girls with *some form of bully/victimhood at T3*, the risk of fail grades in the basic subjects is over twice as high (RR=2.132) than for pupils who were not involved in bullying as either bully or victim at the same measuring point. The effect is fairly similar for the cohort boys and girls with *some form of bully/victimhood during T1-T3* (RR=1.939); to express it in another way, the relative risk for fail grades among these pupils is almost 94% compared with pupils who were not involved as either victims and/or bullies. Girls who were involved in some form of bully/victimhood run a higher risk of obtaining fail grades (RR=2.342) than boys in the same situation (RR=1.645). The influence of absenteeism is reported in the table below.

TABLE 14: Absenteeism at some time during the period T1 T2 T3 and Grades 2014

			For cohort fail grades 2014			
				CI		
	Percentage fail grades	*n* =	RR	Lower	Upper	*p*
Absenteeism T1 (2012)	18.80%	1689	1.578	1.151	2.162	0.005
Boys	25.70%	885	1.959	1.344	2.857	0.001
Girls	12.10%	800	1.169	0.672	2.036	0.582
Absenteeism T2 (2013)	21.80%	1675	2.005	1.517	2.649	0.000
Boys	26.40%	860	2.097	1.449	3.033	0.000
Girls	17.70%	812	1.983	1.290	3.048	0.002
Absenteeism T3 (2014)	17.00%	1605	1.593	1.199	2.115	0.001
Boys	18.80%	818	1.479	1.003	2.181	0.052
Girls	15.60%	785	1.853	1.215	2.827	0.004
Absenteeism T1-T2	20.60%	1631	2.041	1.571	2.652	0.000
Boys	24.50%	834	2.107	1.492	2.976	0.000
Girls	17.20%	794	2.047	1.365	3.069	0.000
Absenteeism T1-T3	18.00%	1523	1.953	1.490	2.558	0.000
Boys	20.10%	757	1.793	1.250	2.570	0.002
Girls	16.40%	764	2.353	1.546	3.582	0.000

For the cohort as a whole (boys and girls), the risk factor *absenteeism T1-T2* has the highest relative risk factor (RR=2.041), followed by *absenteeism T1-T3* (RR=1.953). This result may be interpreted as follows: For pupils with a history of absenteeism, the risk of fail grades in the basic subjects is about twice as high compared to pupils who have not had been absent from school. For girls who had been absent from school to a greater or lesser extent during the measurement period, the risk of fail grades was 2.35 times higher than for girls who had not been absent. For boys with a history of absenteeism, the relative risk of fail grades was 79% compared with boys who had not been absent.

Considered as an isolated factor, the risk category *poor opportunities for social relations during breaks* (”partly-not at all” opportunities of being with anyone else during breaks) has a relatively large impact on the risk of failed grades in the basic subjects.

TABLE 15: Social relations during breaks during the period T1 T2 T3 and Grades 2014

			For cohort fail grades 2014			
				CI		
	Percentage fail grades	*n* =	RR	Lower	Upper	*p*
Social relations during breaks (partly-not at all) T1 (2012)	23.00%	1694	1.961	1.386	2.775	0.000
Boys	32.60%	881	2.410	1.537	3.777	0.000
Girls	16.50%	809	1.692	0.982	2.914	0.063
Social relations during breaks (partly-not at all) T2 (2013)	29.50%	1644	2.807	2.057	3.831	0.000
Boys	30.80%	842	2.571	1.703	3.879	0.000
Girls	28.10%	800	3.113	1.937	5.001	0.000
Social relations during breaks (partly-not at all) T3 (2014)	31.00%	1586	3.032	2.248	4.089	0.000
Boys	36.90%	798	3.222	2.212	4.693	0.000
Girls	25.00%	787	2.781	1.715	4.510	0.000
Social relations during breaks (partly-not at all) at some time during T1-T2	23.70%	1610	2.385	1.786	3.184	0.000
Boys	28.70%	817	2.564	1.755	3.745	0.000
Girls	19.70%	791	2.284	1.469	3.552	0.000
Social relations during breaks (partly-not at all) at some time during T1-T3	22.60%	1501	2.499	1.881	3.320	0.000
Boys	27.70%	737	2.703	1.851	3.948	0.000
Girls	19.00%	764	2.413	1.576	3.693	0.000

For the pupil cohort as a whole (boys and girls), the risk category *could be with someone during breaks partly/not at all at T3* has the greatest impact. Pupils who at T3 – that is to say the same year from which the grades information is taken – estimated their prospects for social relations during breaks as less than good ran three times as high a risk of fail grades in the basic subjects (RR=3.032) compared to pupils who recorded that the alternatives corresponded ”completely” or ”well” to the statement: I have been able to be with others during breaks when I wished to do so. Among boys who made this assessment, the risk is somewhat higher (RR=3.22) than among girls (RR=2.78).

Multivariate analysis

In the above analyses, the isolated impact of a number of variable constructions on grades has been examined with regard to the risk of fail grades in the basic subjects if one belongs to the risk category or not. Some of these risk factors may naturally have an influence on each other. For pupils who were bullied at T1, for example, the risk of absenteeism at T2 was twice as high as among non-bullied pupils at T1 (n= 1676, RR= 1.924, CI=1.370 – 2.702, *p*=0.000). Absenteeism at T2 doubles the risk of fail grades in the basic subjects at T3 compared to non-absent pupils at T2 (n=1675, RR=2.005, CI=1.517 – 2.649, *p*=0,000).

There now follows a presentation of outcomes from analyses involving more variables. On the basis of the reported results above, we address the risk factors that had the strongest influence on grades in the pupil cohort as a whole. The risk categories *absenteeism T1-T2* and *social relations during breaks – partly/not at all T3* are used in all the analyses. These are combined with different types of bullying variables such as *bullied at some time during T1-T3, bullied others at some time during T1-T3* and *any form of bully/victimhood during T1-T3*.

Prior to the multivariate analyses, the variables were coded so that high values correspond to the incidence and risk category. Where the gender variable was used, boys were given the higher value as a somewhat larger percentage of boys than girls had been bullied, subjected others to bullying and/or degrading treatment and had experience of some form of bully/victimhood during T1-T3. Logistic regression analysis is used to investigate the independent variables' effects on the odds of obtaining fail grades checked against each other. We start by presenting the effects that *bullied at some time during T1-T3, absenteeism T1-T2* and *social relations during breaks – partly/not at all T3* have on grades 2014.

TABLE 16: Subjected to bullying, absenteeism, social relations during breaks and grades

	B	Sig.	Exp(B)
Overall pupil cohort			
Bullied at some time during T1-T3	.373	.073	1.453
Absenteeism T1-T2	.622	.001	1.863
Social relations during breaks (partly, not at all) T3 (2014)	1.081	.000	2.949
Constant – 2.357		.000	.095
n =	1507		
Boys			
Bullied at some time during T1-T3	- .023	.941	.977
Absenteeism T1-T2	.778	.002	2.177
Social relations during breaks (partly, not at all) T3 (2014)	1.215	.000	3.369
Constant – 2.172		.000	.114
n =	740		
Girls			
Bullied at some time during T1-T3	.791	.006	2.206
Absenteeism T1-T2	.515	.049	1.674
Social relations during breaks (partly, not at all) T3 (2014)	.932	.007	2.540
Constant – 2.585		.000	.075
n =	766		
With gender in the model (boys highest value)			
Gender	.372	.024	1.451
Bullied at some time during T1-T3	.387	.064	1.472
Absenteeism T1-T2	.664	.000	1.942
Social relations during breaks (partly, not at all) T3 (2014)	1.084	.000	2.956
Constant – 2.564			0.77
n =	1506		

Column B gives the β-coefficients (regression coefficients). In logistic regression, the β-coefficient for a variable x can be interpreted in the following way: ”*Given that other variables have been set to their mean, a unit's change of x means a change in β of the dependent variable y”* (Barmark & Djurfeldt, 2009, p.142). A β-coefficient indicates how much the logarithmic odds (the logit) change(s) when the x-variables increase by one unit. For girls who belong to the risk category bullied at some time during the measurement period, for example, the logit increases by 0.791 when the value of the bullying variable is changed by one unit from 0, not bullied to 1, bullied at some time during T1-T3.

A perhaps simpler interpretation of the results is offered by the figures in column Exp(B), where the so-called odds ratio (OR) is given. An odds ratio indicates how the odds (the likelihood) of belonging to an outcome category increase or decrease when the value of the independent variable increases by one unit (Tabachnick & Fidell, 2001: p.548). One of the odds ratios in the table above indicates, for example, how much higher (or lower) the odds of obtaining fail grades are for pupils who have been bullied compared to pupils who have not been bullied, when holding all other risk factors in the model constant. If the odds of obtaining fail grades were independent of whether or not one is bullied, the odds ratio would be 1.0. An odds ratio above 1 indicates a positive relation and an odds ratio below 1 a negative relation. In the table above, all significant odds ratios exceed 1, which means that there is a positive relation between the independent variables and the dependent variable.

For girls, the odds ratio for the risk factor absenteeism is 1.674, which may be interpreted as follows: for girls who have been absent from school during T1-T2, the odds of obtaining fail grades is 1.67 times higher than for non-absent girls; the result can alternatively be read such that the odds of obtaining fail grades is 67% higher for absent girls (T1-T2) than for non-absent girls during the same period. For girls who have experiences of being bullied, the odds of obtaining fail grades is over twice (OR=2.206) that of non-bullied girls. For boys bullied during the measurement period, however, there is no significant effect on grades. This is also indicated by the result for the pupil cohort as a whole, covering both boys and girls (at the top of the table), where bullied at some time during T1-T3 did not have any significant effect on grades (p=0.073). Nor is the effect of bullying significant (p=0.064) when the gender variable is entered (lower in the table) into the analysis alongside other variables, when gender is controlled for in the model.

The factor which has the greatest impact on grades for girls and boys – on the odds of obtaining fail grades – is that which concerns social relations. For girls who estimate their chances of being able to be with someone during breaks as small at T3 (2014), the odds of obtaining fail grades in the basic subjects in the same year are 2.5 times higher than for girls who estimate their prospects as good. Among boys in the same situation, the corresponding odds ratio was 3.369.

In the analysis of which the outcome is reported in Table 17 below, the victim category was substituted with the bully category. For the pupil cohort as a whole, the various types of risk factors contributed significantly to the risk of obtaining fail grades (see upper part of the table).

TABLE 17: Subjected others to bullying and/or degrading treatment, absenteeism, social relations during breaks and grades

	B	Sig.	Exp(B)

Overall pupil cohort			
Bullies at some time during T1-T3	.692	.008	1.998
Absenteeism T1-T2	.604	.001	1.830
Social relations during breaks (partly, not at all) T3 (2014)	1.060	.000	2.886
Constant – 2.348		.000	.096
n =	1507		
Boys			
Bullies at some time during T1-T3	.676	.042	1.966
Absenteeism T1-T2	.674	.009	1.961
Social relations during breaks (partly, not at all) T3 (2014)	1.110	.001	3.035
Constant – 2.214		.000	.109
n =	740		
Girls			
Bullies at some time during T1-T3	.582	.171	1.789
Absenteeism T1-T2	.616	.016	1.852
Social relations during breaks (partly, not at all) T3 (2014)	1.042	.002	2.836
Constant – 2.506		.000	.082
n =	766		
With gender in the model (boys highest value)			
Gender	.331	.046	1.392
Bullies at some time during T1-T3	.643	.014	1.903
Absenteeism T1-T2	.645	.000	1.905
Social relations during breaks (partly, not at all) T3 (2014)	1.073	.000	2.923
Constant – 2.527			0.80
n =	1506		

The risk category poor opportunities of social relations during breaks has the greatest association with grades on the pupil cohort as a whole. For pupils belonging to this category, the likelihood of fail grades is 2.88 times higher than for pupils with good prospects of being with someone during breaks. Having been a bully at some time (T1-T3) or absent from school (T1-T2) is associated with grades to a relatively similar extent; OR for these risk factors was 1.998 and 1.830 respectively. What is stated above concerning the risk factors' relative effect on the pupil cohort as a whole also applies when the pupils' gender is added to the analysis (see the lower section of the table).

When, however, the analyses are conducted separately for boys and girls, the association between having been a bully and grades is no longer significant where the girls are concerned (OR=1.789, p=0.171), this being quite the opposite in the case of boys (OR=1.966, p=0.042). Unlike the bullying variable *bullied at some time during T1-T3*, which was not significant for boys but was for girls, the result for the bullying variable *bullies at some time during T1-T3*, is thus the reverse. As was the case when the risk factor bullied at some time was investigated together with absenteeism and social relations during breaks, it is the latter variable that has the

greatest effect on grades. For pupils belonging to the risk category poor opportunities for social relations during breaks, the odds ratio lies between 2.836 (minimum, concerning girls) and 3.036 (maximum, concerning boys). In the overall pupil cohort (boys and girls), just as when gender is entered into the analysis, the odds of obtaining fail grades are 2.9 times higher among pupils who estimate their prospects of social relations as poor than among pupils who estimate their prospects as good.

When the bullying variable consists of pupils who have experience of some form of bully/victimhood during T1-T3, all types of risk factors have a significant impact on grades in the overall student cohort (see the upper part of the table below).

TABLE 18: Bully/victimhood, absenteeism, social relations during breaks and grades

	B	Sig.	Exp(B)
Overall pupil cohort			
Some form of bully/victimhood during T1-T3	.511	.008	1.667
Absenteeism T1-T2	.584	.001	1.793
Social relations during breaks (partly, not at all) T3 (2014)	1.034	.000	2.812
Constant – 2.390		.000	.092
n =	1507		
Boys			
Some form of bully/victimhood during T1-T3	.298	.267	1.347
Absenteeism T1-T2	.729	.004	2.073
Social relations during breaks (partly, not at all) T3 (2014)	1.146	.000	3.145
Constant – 2.218		.000	.109
n =	740		
Girls			
Some form of bully/victimhood during T1-T3	.751	.007	2.118
Absenteeism T1-T2	.513	.050	1.671
Social relations during breaks (partly, not at all) T3 (2014)	.916	.008	2.500
Constant – 2.598		.000	.074
n =	766		
With gender in the model (boys highest value)			
Gender	.361	.029	1.435
Some form of bully/victimhood during T1-T3	.507	.008	1.661
Absenteeism T1-T2	.626	.001	1.870
Social relations during breaks (partly, not at all) T3 (2014)	1.041	.000	2.831
Constant – 2.589			0.75
n =	1506		

In the pupil cohort as a whole, the bullying variable *some form of bully/victimhood* is the factor which has least influence on grades, while poor opportunities of social relations during breaks has the greatest influence. The significance of the influence and their mutual ranking remain when the pupils' gender is added as the independent variable in the logistic regression. The

odds ratio for gender is 1.435, which means that the odds of obtaining fail grades is higher for boys than for girls *simply on the strength of their gender*. When the risk factors' influence on grades are measured for the respective genders, the pattern of outcome is more similar to that of victims than that of bullies. In other words, having been involved in bullying as a victim or bully during the measurement period has a significant association with grades for girls (OR=2.118, p=0.007) but not for boys (OR=1.347, p=0.267).

The results of the above logistic recession analyses can be summarized as follows:

- Poor opportunities for social relations during breaks has the greatest influence on the risk of fail grades in the basic subjects English, Mathematics and Swedish (or Swedish as a second language) for both boys and girls, just as it does for the pupil cohort as a whole including when the pupils' gender is included in the analysis.

- In the pupil group as a whole – and taking the pupils' gender into consideration – absenteeism has a greater influence on grades than having been involved in bullying as a victim or bully/victim. When the bullying variable consists of bullies, the influence of absenteeism is almost identical with experience of having subjected others to bullying/degrading treatment.

- Where boys are concerned, experience of being bullied or experience of some form of bully/victimhood have no significant influence on grades. For boys who bullied others at some time, the 'bullyhood' has almost the same influence on grades as absenteeism.

- For girls, the outcome pattern is quite different. For girls who bullied others at some time, the 'bullyhood' has no significant influence on grades. For girls with experience of being bullied or experience of some form of bully/victimhood, the influence on grades is greater than the effect of absenteeism.

Underlying patterns in the population using Configural Frequency Analysis

Configural Frequency Analysis (CFA) may be described in general terms as a method of non-parametric multivariate analysis which is used to typologize category data on the basis of cross tabulation (von Eye 2004). CFA is applicable in both hypothesis testing and theory generation analysis (Indurkhya & von Eye 2000), but can also be used to evaluate, for example, the effects of treatment. The purpose of the use of CFA in the current study is to discover individuals who present similarities in patterns regarding combinations of variable values (configurations) in the set of independent and/or dependent variables we focused on earlier. In this case, it is about identifying configurations that appear significantly more (types) or significantly less (antitypes) than we might expect from the effect of chance. Instead of calculating the total Chi^2-value for bivariate or multivariate distribution tables, as in traditional Chi^2-analysis, each individual cell in a table is examined to identify underlying patterns in the data and the combinations of variable values (configurations) in the studied population which differ significantly from the general pattern. A first-order CFA is used in the analysis. In its basic version, first-order CFA assumes there are main effects and that types and antitypes can only be developed on the basis of the occurrence of interactions between the studied variables. In the model, the expected frequency distribution is based on the marginal frequency (von Eye 2002:112). The analysis uses a normal z-test as a significance test ($\alpha = 0.05$ with Bonferroni-adjusted alpha) (von Eye & Brandtstädter 1997: 14; von Eye 2002: 81).

In the present study, CFA is used as a tool to analyse and identify causal relations at category level, that is to say how unique characteristics in individuals interact with one another rather than how characteristics in groups of individuals (aggregated level) exhibit covariance at the variable level. In this case, this means attempting to identify specific patterns of types and antitypes, which may hint at particular causal relations. Put simply, the occurrence of types and antitypes may provide insight into if and how ”the exceptions that prove the rule” are manifested and what characterizes them.

TABLE 19: Results Configuration frequency analysis (CFA) of bully-victim profiles, absenteeism T1-T3, social relations during breaks T1-T3 and grades

Bully-victim profiles T1-T3:	Absenteeism at some time during the period T1 T2 T3	Been able to be with someone during breaks T1 T2 T3	Pass grades basic subjects 2014	CFA-configuration	Observed		Expected		Residuals	Std. Residuals	Type/Antitype
					Count	%	Count	%			
Bully-Victim	Yes	Yes	Yes	1111	6.000	0.4%	22.193	1.5%	-16.193	-3.437	Antitype***
			No	1112	1.000	0.1%	2.893	0.2%	-1.893	-1.113	
		No	Yes	1121	7.000	0.5%	4.609	0.3%	2.391	1.114	
			No	1122	1.000	0.1%	.601	0.0%	.399	.515	
	No	Yes	Yes	1211	11.000	0.8%	10.039	0.7%	.961	.303	
			No	1212	3.000	0.2%	1.309	0.1%	1.691	1.478	
		No	Yes	1221	8.000	0.6%	2.085	0.1%	5.915	4.097	Type***
			No	1222	7.000	0.5%	.272	0.0%	6.728	12.906	Type***
Bully	Yes	Yes	Yes	2111	13.000	0.9%	25.723	1.8%	-12.723	-2.509	**
			No	2112	5.000	0.3%	3.353	0.2%	1.647	.899	
		No	Yes	2121	5.000	0.3%	5.342	0.4%	-.342	-.148	
			No	2122	2.000	0.1%	.696	0.0%	1.304	1.562	
	No	Yes	Yes	2211	20.000	1.4%	11.636	0.8%	8.364	2.452	**
			No	2212	1.000	0.1%	1.517	0.1%	-.517	-.420	
		No	Yes	2221	2.000	0.1%	2.417	0.2%	-.417	-.268	
			No	2222	3.000	0.2%	.315	0.0%	2.685	4.784	Type***
Victim	Yes	Yes	Yes	3111	48.000	3.3%	79.188	5.5%	-31.188	-3.505	Antitype***
			No	3112	5.000	0.3%	10.323	0.7%	-5.323	-1.657	*
		No	Yes	3121	22.000	1.5%	16.445	1.1%	5.555	1.370	
			No	3122	4.000	0.3%	2.144	0.1%	1.856	1.268	
	No	Yes	Yes	3211	35.000	2.4%	35.821	2.5%	-.821	-.137	
			No	3212	9.000	0.6%	4.670	0.3%	4.330	2.004	*
		No	Yes	3221	26.000	1.8%	7.439	0.5%	18.561	6.805	Type***
			No	3222	8.000	0.6%	.970	0.1%	7.030	7.139	Type***
Not involved	Yes	Yes	Yes	4111	741.000	51.2%	603.238	41.7%	137.762	5.609	Type***
			No	4112	56.000	3.9%	78.642	5.4%	-22.642	-2.553	**
		No	Yes	4121	65.000	4.5%	125.276	8.7%	-60.276	-5.385	Antitype***
			No	4122	16.000	1.1%	16.332	1.1%	-.332	-.082	
	No	Yes	Yes	4211	217.000	15.0%	272.879	18.8%	-55.879	-3.383	Antitype***
			No	4212	28.000	1.9%	35.574	2.5%	-7.574	-1.270	
		No	Yes	4221	55.000	3.8%	56.670	3.9%	-1.670	-.222	
			No	4222	18.000	1.2%	7.388	0.5%	10.612	3.904	Type***

***p<.001 **p<.01 *p<.05. First order CFA with the normal z-test used. Bonferroni-adjusted alpha = .0015625. Chi^2 for CFA model = 454.0367, df = 25 p = .00000000.

The previous analysis has shown that factors such as pupils being bullies or victims, absenteeism and social relations with peers affect pupils' ability to perform academically (to achieve pass grades). In what follows below, we have deepened the analysis using CFA to investigate individuals who exhibit similarities in patterns regarding combinations of variable values (configurations) in relation to the variables mentioned above.

In the CFA-model concerning how a pupil's bully/victim profile interacts with any absenteeism during the period T1-T3, if the pupil was able to be with someone else during breaks during the period T1-T3 and whether the pupil achieved pass grades in the basic subjects, seven types and four antitypes emerge (see table 19). Two of the types belong to the bully/victim profile *bully-victim*, two to the bully/victim profile *victim*, one to the bully/victim profile *bully* and two to the group of pupils who were not involved in bullying either as bully or victim (not involved).

Concerning bully-victims, the results show two types and one antitype. The first type (configuration 1221) indicates that it is more common than may be expected by chance that a bully-victim with no absenteeism and inability to be with others during breaks obtains pass grades. The second type (configuration 1222) indicates that it is more common than may be expected by chance that a bully-victim with no absenteeism and inability to be with others during breaks does *not* obtain pass grades. This is confirmed by the antitype (configuration 1111), which indicates that it is highly unlikely for a bully-victim with absenteeism but who is able to be with friends during breaks to achieve pass grades. Taken together, the results suggest that the victim/bully category bully-victims is not a homogeneous category since one and the same predictor category – bully/victim – in combination with the absence of absenteeism and the absence of someone to be with during breaks can result in different outcomes concerning grades.

The bully/victim category bully contains one type (configuration 2222) which indicates that it is more common than may be expected that a bully with no absenteeism but who lacks someone to be with during breaks does not obtain pass grades.

The bully/victim category victim contains two types. The first (configuration 3221) indicates that it is more common than may be expected that a victim with no absenteeism and who lacks someone to be with during breaks obtains pass grades. The second type (configuration 3222) indicates that it is more common than may be expected that a victim with no absenteeism and who lacks someone to be with during breaks does *not* obtain pass grades. The results indicate that the victim/bully category victim is complex since the same predictor categories – being bullied in combination with not having absenteeism and not being able to be with someone

during breaks – can result in different outcomes concerning grades. In these cases, the possibility of obtaining pass grades appears to be affected by factors not considered in this analysis. We will return to this later.

In the group of pupils who neither bullied others nor were victimized, two types and two antitypes emerged. The first type (configuration 4111) indicates that it is more likely than may be expected that a non-involved pupil with absenteeism but who has been able to be with someone during breaks obtains pass grades. This is confirmed by the first antitype (configuration 4122), which indicates that it is less common than we might expect that a non-involved pupil with absenteeism and who has not been able to be with someone during breaks obtains pass grades. In both these configurations, it appears that a pupil's social relations with peers during breaks over the last year influences the likelihood of obtaining pass grades.

The second type (configuration 4222) shows that it is more likely than we might expect that a non-involved pupil with no absenteeism but who was unable to be with someone during breaks does *not* obtain pass grades. The second antitype (configuration 4211) indicates that it is less likely than we might expect that a non-involved pupil with no absenteeism but who has been able to be with someone during breaks obtains pass grades. In both these configurations, the pupil's social relations during breaks over the past year appears to affect the likelihood of obtaining pass grades in a way that we could not expect on the basis of the aggregated pattern.

TABLE 20: Similarities in patterns regarding bully/victim profiles, absenteeism T1-T3 and social relations during breaks T1-T3 and grades

TYPES (STATISTICALLY SIGNIFICANT CONFIGURATIONS)	BULLY/VICT PROFILE T1-T3	ABSENTEEISM T1-T3	COULD BE WITH S/ONE DURING BREAKS T1-T3	PASS GRADES IN BASIC SUBJECTS 2014
TYPE I (1221)	Bully-victim	No	No	Yes
TYPE II (1222)	Bully-victim	No	No	No
TYPE III (2222)	Bully	No	No	No
TYPE IV (3221)	Victim	No	No	Yes
TYPE V (3222)	Victim	No	No	No
TYPE VI (4111)	Not involved	Yes	Yes	Yes
TYPE VII (4222)	Not involved	No	No	No

Overall, the CFA analysis shows that the outcome of the pupil's academic performance differs depending on whether pupils were involved in bullying (as bullies, victims or both), whether they had absenteeism and if they could be with someone during breaks. The examination of the types will be further elaborated in the following in order to determine what characterizes them according to individual risk behaviours and characteristics as well as the ability to cope with different situations in life. The degree of individual risk behaviours and characteristics as well

as the ability to cope with different stressors is related to the ability to achieve pass grades in general but how and in what way does it affect the types described above?

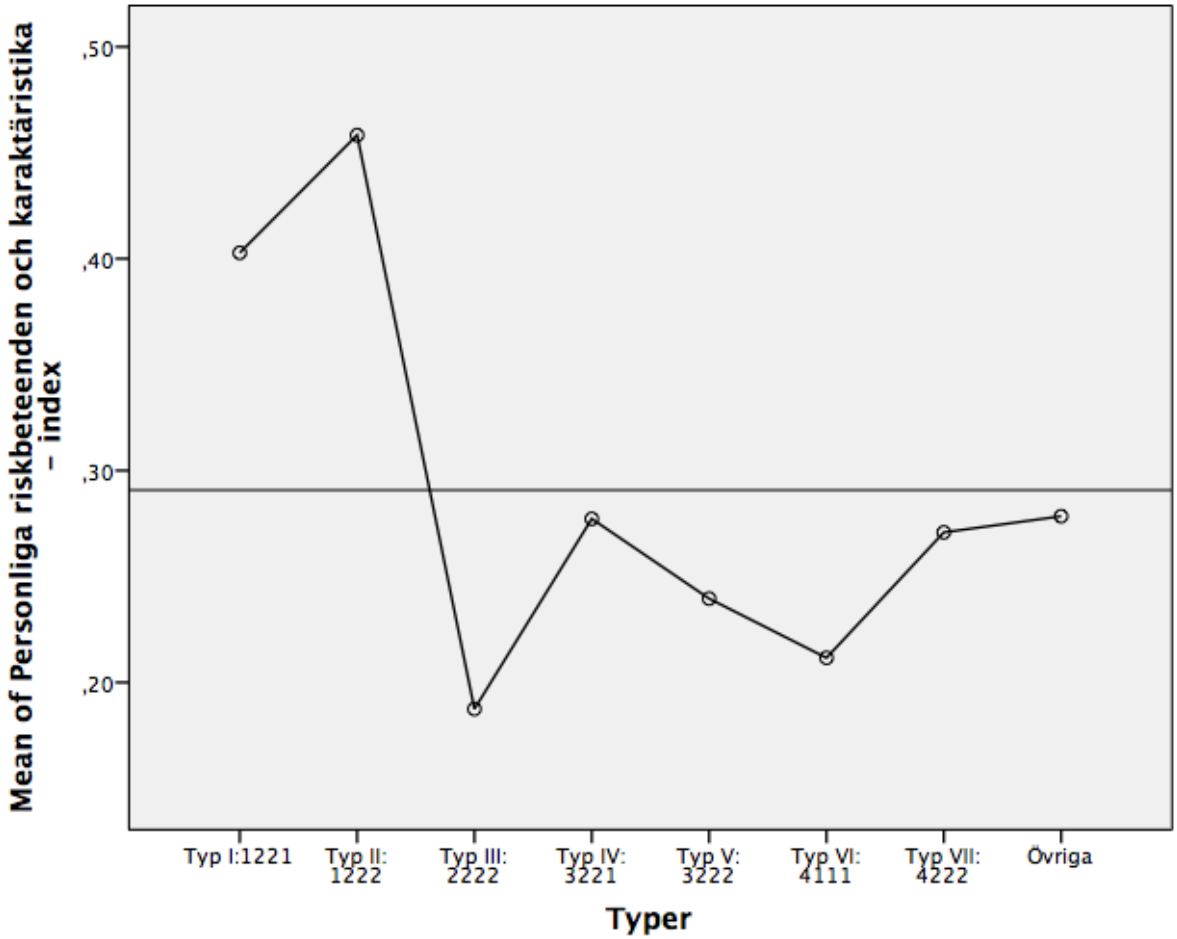
Individual risk behaviours and characteristics

Where individual risk behaviours and characteristics are concerned, the pupils, at the first measurement point (T1) and with the aid of a four-level Likert scale (corresponds not at all, corresponds quite poorly, corresponds quite well, corresponds exactly), reported the extent to which eight statements about personal attitudes regarding different behaviours and approaches corresponded or otherwise to their own perceptions. The statements were formulated as follows: ”I quickly get tired of things when there is too little variety”, ”I regard myself as quite an impulsive person”, ”I think that crying, even when no-one is looking, is a sign of weakness”, ”When others have problems, it is often their own fault; then one should not help them”, ”It often happens that I speak first and think afterwards”, ”It is important to me not to hurt other’s feelings”[1], ”When anyone gets to know about something I have done wrong, I feel angry rather than guilty” and ”I love doing dangerous and exciting things, even if they are forbidden or illegal”. The individual variables have been merged in a summary index concerning the degree of individual risk behaviours and characteristics.

The analysis shows that there are significant differences regarding the average (mean) individual risk behaviours and characteristics ($F=11.934$; $p <.001$) between the identified types.

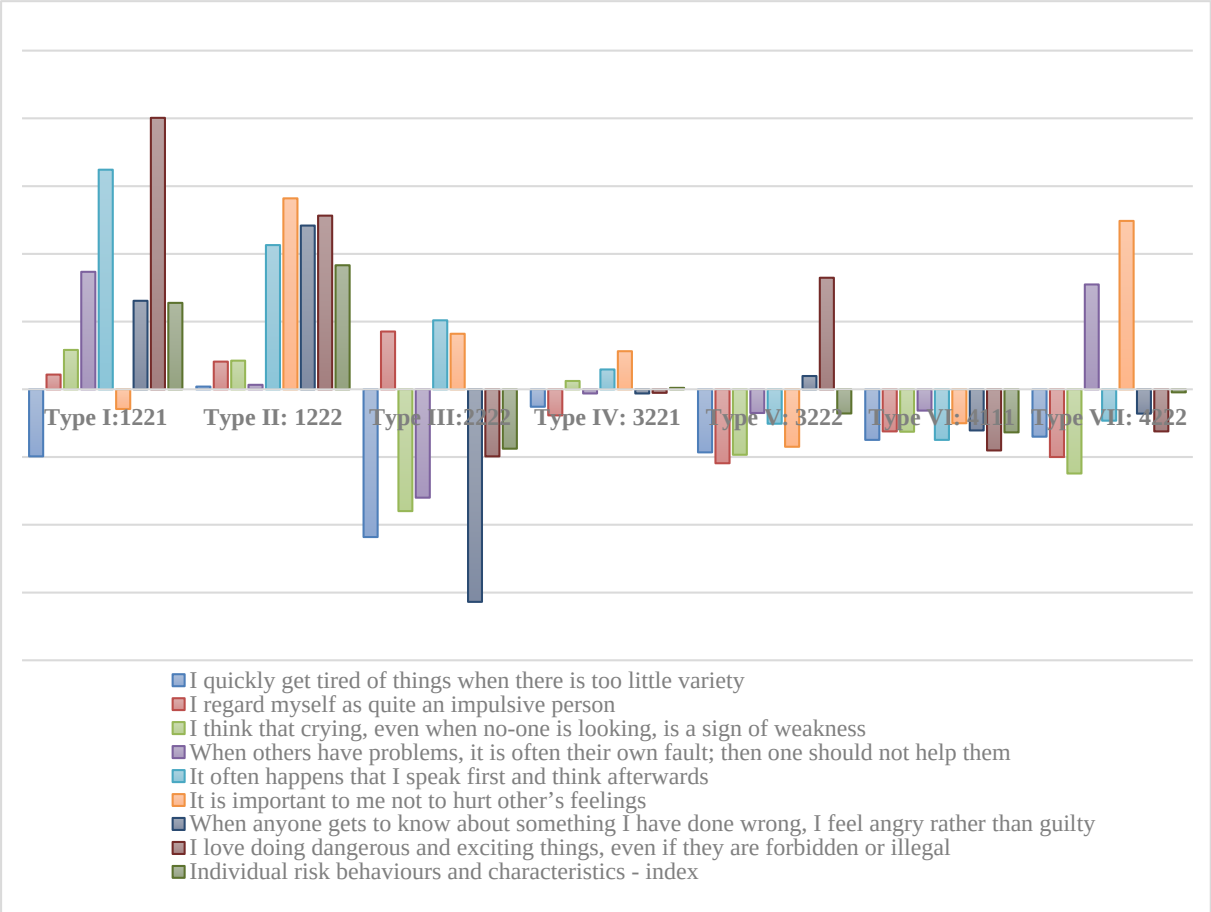
[1] The variable is recoded in the analyses so that high values mean one does not agree with the statement.

DIAGRAM 1: Individual risk behaviours and characteristics for the different types (standardized mean)



Closer investigation shows that the differences are linked to specific individual risk behaviours and characteristics (see diagram 2). Both types belonging to the category *bully-victim – Type I* (boys 62.5 %) and *Type II* (boys 57.1%) – exhibit on average a higher degree of individual risk behaviours and characteristics in comparison with other types and the rest of the population. The individuals belonging to both types regard themselves as impulsive to a larger extent, see crying as a sign of weakness, feel empathy with others to a lesser extent, often act impulsively, feel anger rather than guilt to a greater extent when they have done something wrong and seek excitement to a greater extent (love doing dangerous and exciting things) in comparison with the average for the whole population. Those belonging to *Type II* also state to a greater extent that they do not consider it important not to hurt others' feelings.

DIAGRAM 2: Individual risk behaviours and characteristics in the types in relation to the average for the overall population (standardized values)



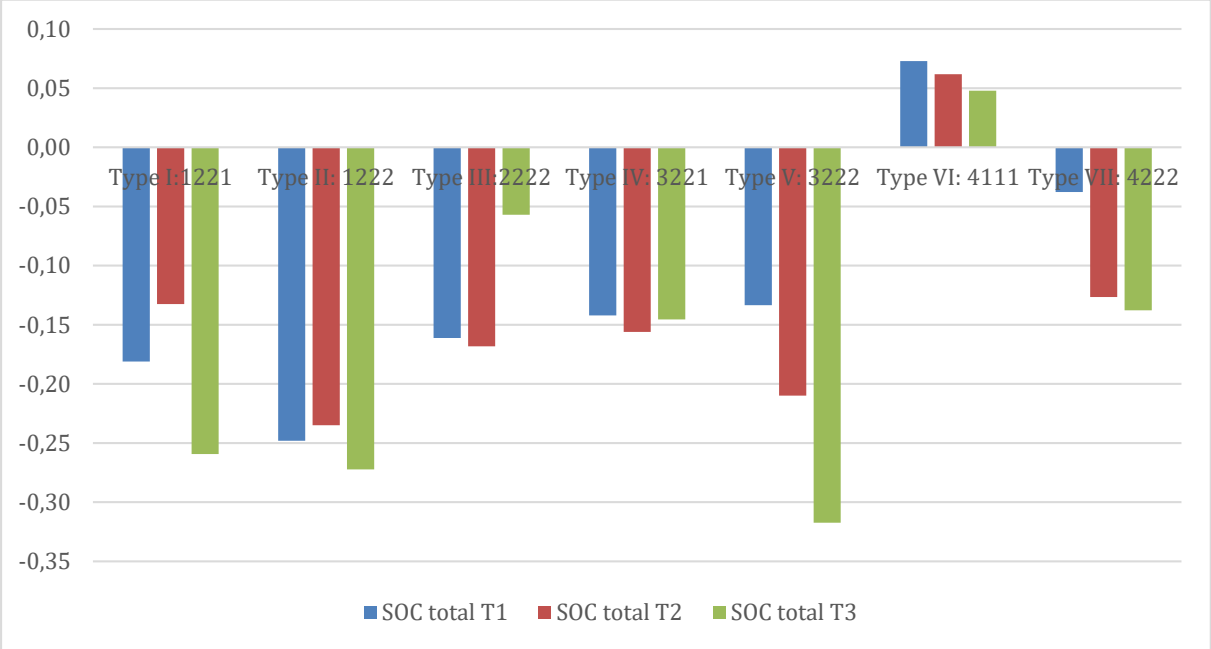
Where the type belonging to the category *bully* (*Type III* (boys 100 %) is concerned, they feel on average that they are more impulsive and act more impulsively to a greater extent. As with Type II, they consider it not to be important to avoid hurting others' feelings. On the other hand, they indicate to a lesser degree that they quickly get tired of things when there is too little variety, to a lesser extent regard crying as a sign of weakness, feel empathy to a greater extent and anger rather than grief to a lower extent when they do something wrong. Where other types are concerned, the variations are less pronounced. It is nevertheless worth noting that the individuals who belong to *Type V* (girls 87.5 %), belonging to the category *victim*, exhibit below average outcomes regarding the majority of risk behaviours and characteristics with the exception of seeking excitement.

Pupils' sense of coherence – SOC

A person with a strong sense of coherence (SOC) is assumed to meet the demands and stresses of different areas of life in a satisfactory manner. The sense of coherence means that such stress factors may be perceived as *comprehensible*, *manageable* and *meaningful*. These three components constitute different dimensions of the SOC concept.

A person who grows up and lives under favourable living conditions, who has access to social support, ego strength and other so-called generalized resistance resources, will, according to Antonovsky (1987), develop a strong sense of coherence. Generalized resistance resources offer individuals life experiences characterized by consistency (stability and predictability, which creates security), balance between stressors/demands and available resources and participation in processes that affect or are important in the day-to-day life of the individual (Antonovsky, 1979). Consistent experiences relate to the comprehensibility component of the SOC concept. Balance between stress/demands and available resources relates to the SOC component manageability. Participation in decision-making processes refers to the component meaningfulness. (1987:92). Expressed differently, the SOC concept may be seen as an individual's tendency to consider and relate to the outside world in general "rather than a response to a specific situation" (Antonovsky 1987:75). In this way, SOC is included in the individual's global orientation. The original SOC form, which was developed to apply to the adult life situation, has been modified in this study. Using a three-level Likert scale, the pupils were asked to relate to twelve statements about the school situation. The statements aim at capturing the pupils' local orientation - that is, how students perceive school as a 'life area'.

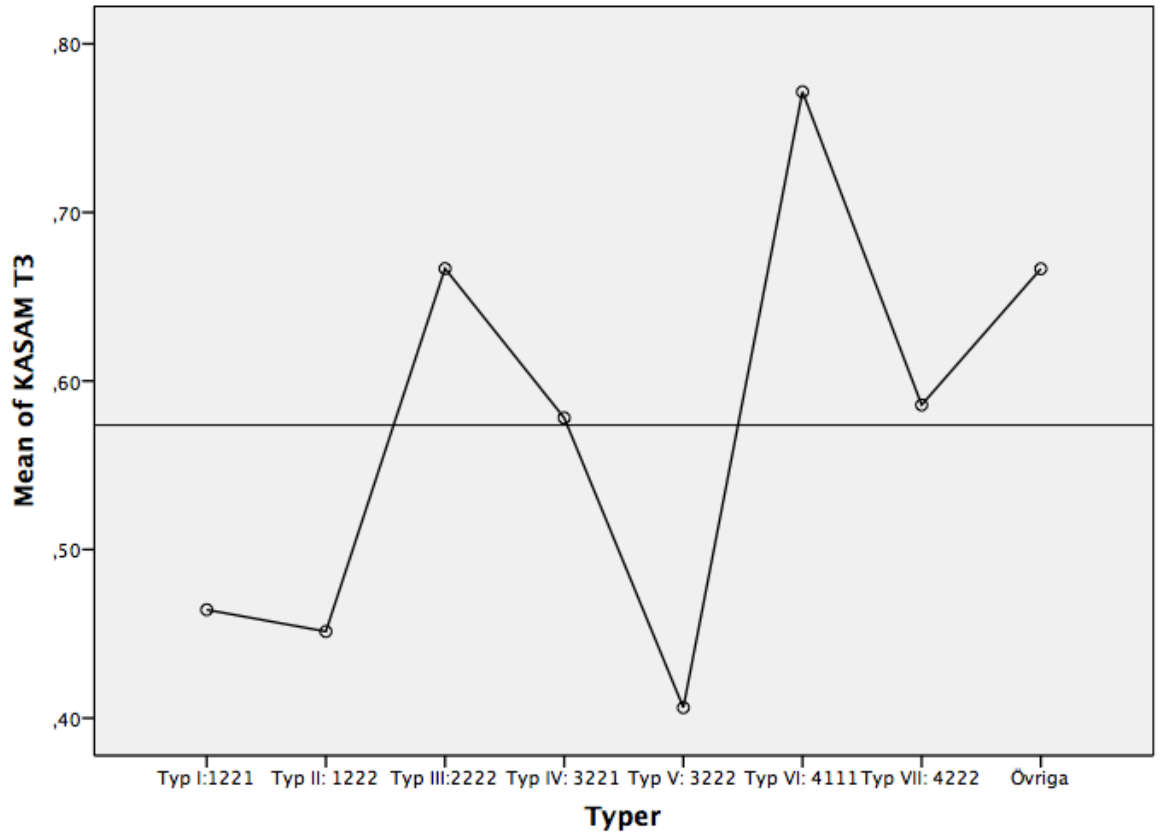
DIAGRAM 3: SOC for the different types in relation to the average for the total population, T1, T2, T3 (standardized mean values)



It appears from the results that pupils' involvement (if any) in bullying as a victim, bully or both affects their average SOC over time and in different ways (see diagram 3).

Generally speaking, pupils with SOC below average run a higher risk of obtaining fail grades (RR = 1.221, CI:1.092–1.366) compared to pupils with an SOC above average. At the same time, the previous analysis has shown that involvement in bullying as a victim, bully or both increases the risk of fail grades. If we investigate the seven types a little more closely on this basis, it appears that pupils' average SOC affects the likelihood of obtaining pass grades when pupils' conditions are otherwise similar. Type I (Bully-victim, with no absenteeism, who lacks someone to be with during breaks and has obtained pass grades) exhibits a higher average SOC than Type 2 (Bully-victim, with no absenteeism, who lacks someone to be with during breaks, but who has not obtained pass grades). The distinction between Type IV (Victim, with no absenteeism, who lacks someone to be with during breaks and has obtained pass grades) and Type V (Victim, with no absenteeism, who lacks someone to be with during breaks, but who has not obtained pass grades) is even clearer. The latter type has a considerably lower SOC than the former.

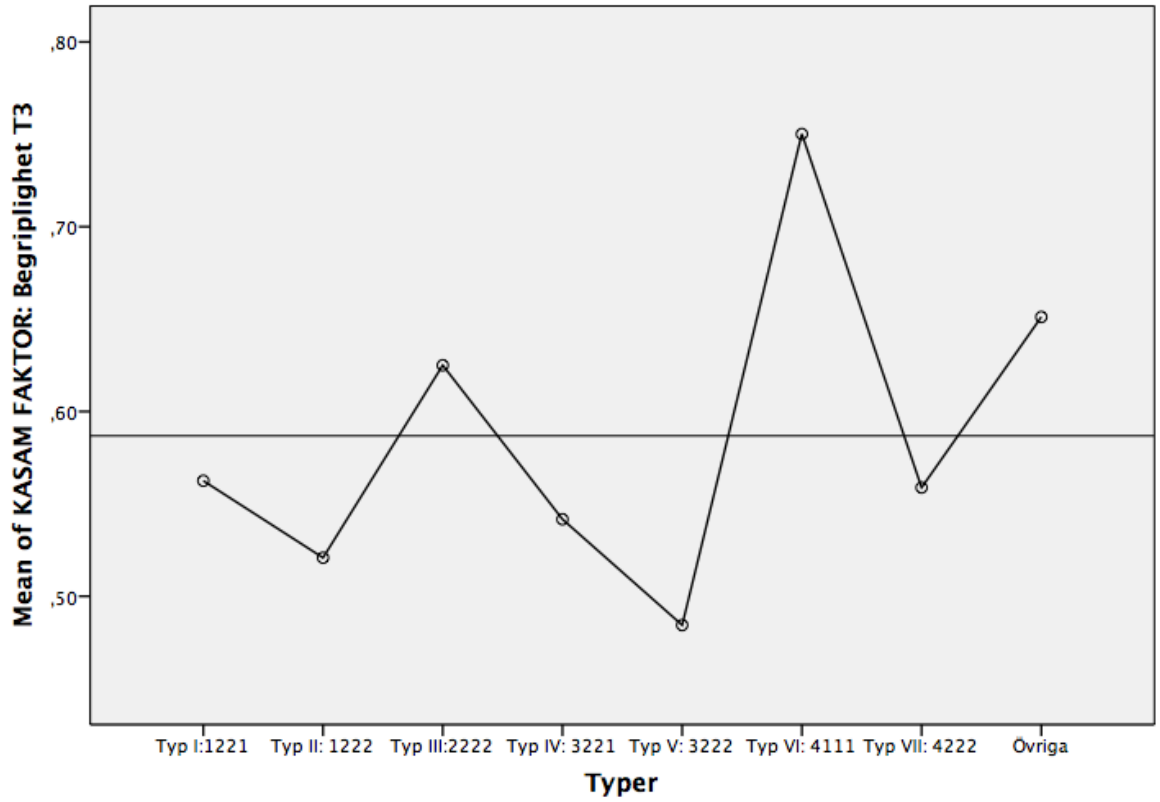
DIAGRAM 4: SOC for the different types, T3 (standardized mean values)



Overall, the analysis shows that there are significant differences regarding the average SOC (F=33.943; p<.001) between the identified types.

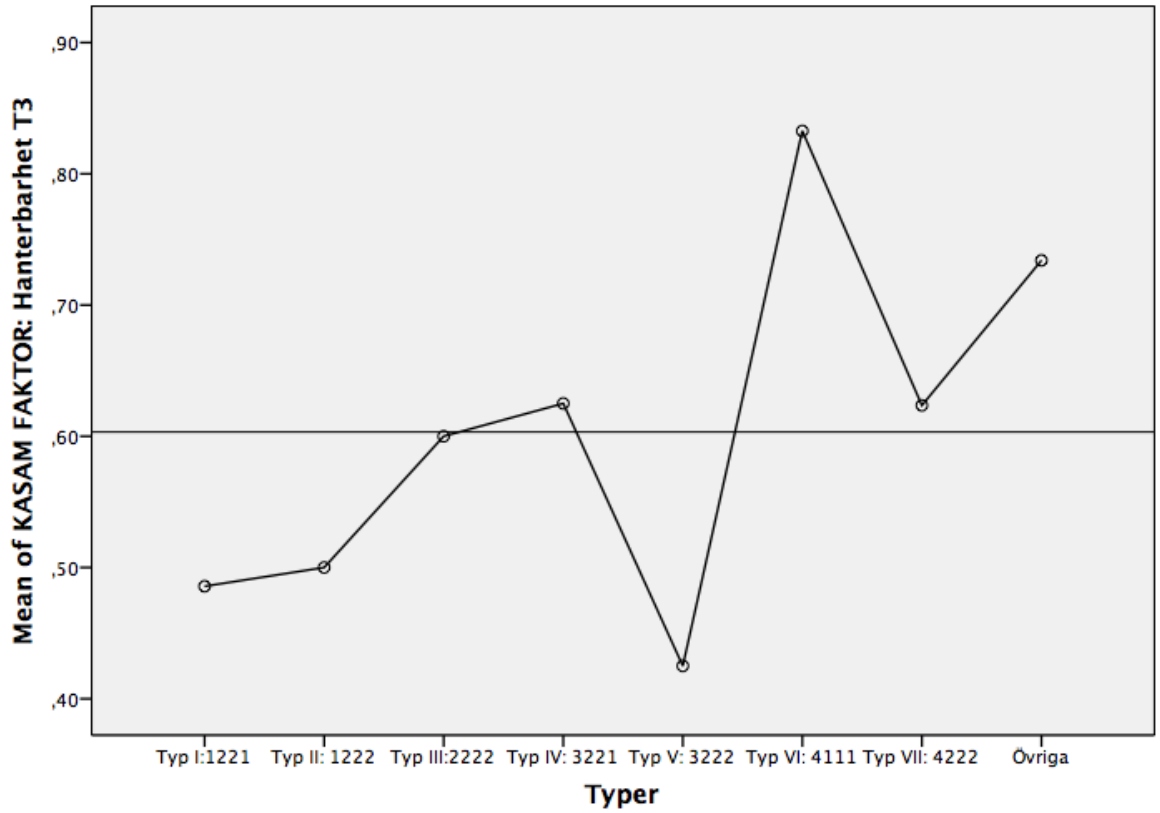
Where the individual SOC components – comprehensibility, manageability and meaningfulness – are concerned, differences between the various types occur here too.

DIAGRAM 5: Comprehensibility for the different types, T3 (standardized mean values)



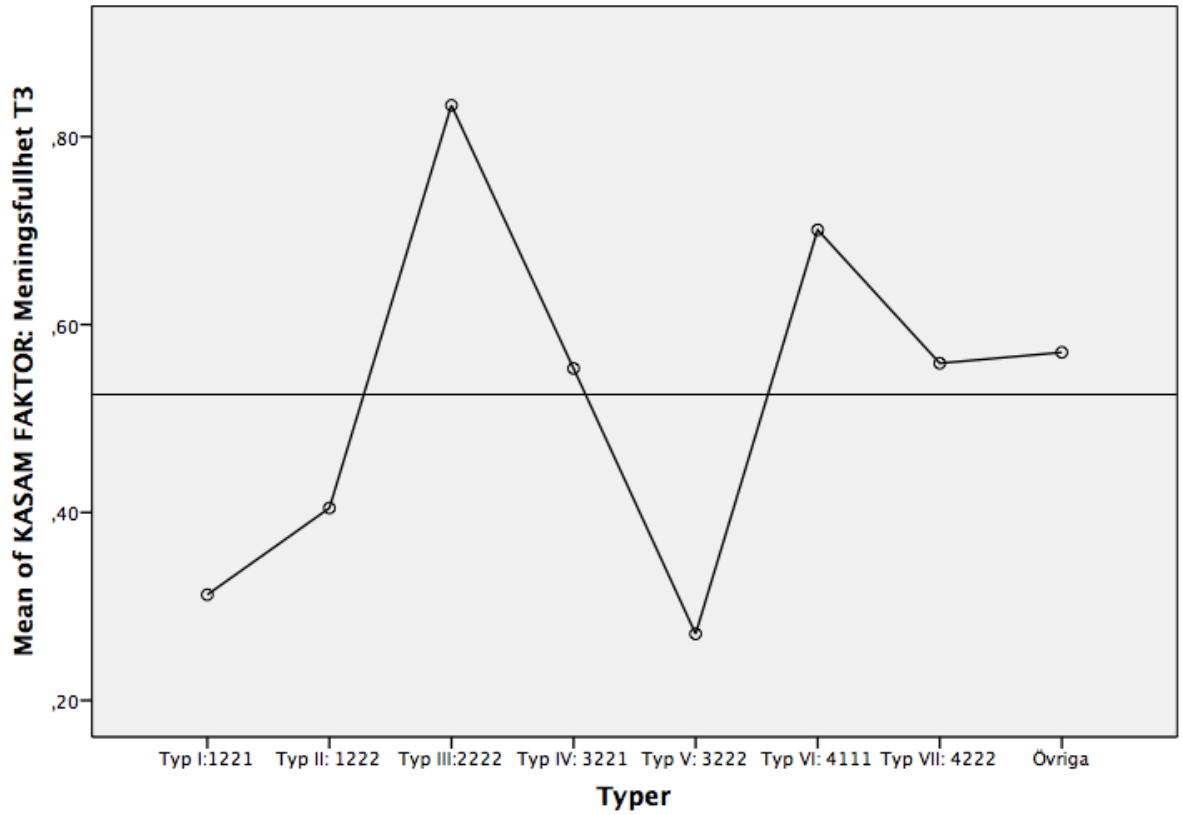
The results show that there are significant differences between the identified types relating to average comprehensibility (F=22.423; p<.001). The SOC component comprehensibility is lower depending on the pupils involvement (if any) in bullying as bully-victim (Type I and Type II) or victim (Type IV and Type V). However, it is worth noting that comprehensibility may also be lower for pupils who are not involved in bullying (Type VII).

DIAGRAM 6: Manageability for the different types, T3 (standardized mean values)



Even with regard to the SOC component manageability, the analysis shows that there are differences. The results show significant differences between the identified types in relation to mean manageability ($F=28.125$; $p<.001$). However, there are three types that exhibit a lower degree of manageability compared with the others. Manageability seems to be lower depending on pupils' involvement (if any) in bullying as bully-victim (Type I and Type II) or victim (Type V).

DIAGRAM 7: Meaningfulness for the different types, T3 (standardized mean values)



Concerning the SOC component meaningsfulness, the analysis shows significant differences between the identified types (F=15.052; p<.001). It is worth noting that the mean meaningfulness, as with manageability, is lower if pupils are involved in bullying as bully-victim (Type I and Type II) or victim (Type V). On the other hand, the mean meaningfulness in the group of pupils involved in bullying as bullies (Type III) was higher.

It appears from the results that comprehensibility, manageability and meaningfulness vary and take on different modes of expression depending on pupils' involvement (if any) in bullying as victims, bullies or both. The analysis demonstrates above all that pupils who belong to the bully-victim category (Type I and Type II) and victim category (Type V) exhibit a lower degree of comprehensibility, manageability and meaningfulness. A reasonable interpretation may be that *victimization* in itself contributes to the worsening of the individual's abilities to understand emotional (inner) and relational (outer) stimuli, as well as the ability to predict future stimuli. Victimization in itself also negatively impacts the individual's abilities to manage and control stressors, create meaning in existence and feel involvement and participation in processes which are important to the individual. Victimization thus affects the ability to understand and predict one's surroundings, to manage and control stressors and to make sense of existence. In other words, pupils' victimization affects their basic sense of security and life orientation and, as their relationships with peers and teachers deteriorate, their resistance is weakened, which means

that the risk of continued victimization and impaired academic performance increases. Although a pupil's victimization may change, we know from earlier studies that comprehensibility, manageability and meaningfulness are not directly affected (Johansson & Flygare, 2013). There is a certain lag effect.

What explains pupils' belonging to the different types?

To elaborate the analysis and clarify what influences pupils' belonging to the various types, an SPSS Decision Tree (CHAID) is used to test whether, and in what way, factors such as pupils' gender, individual risk behaviours and characteristics and SOC, as well as the prevalence of bullying at school level can help to explain pupils' belonging to the different types.

The procedure creates a classification model where the individual cases (types) are classified in various nodes on the basis of the values in a set of independent variables (gender, individual risk behaviours and characteristics, SOC and prevalence of bullying at school level). The aim is to examine whether, and in what way, the factors contribute to pupils' belonging to the different types.

The variables used are categorized in the following way:

Gender	1 boy
	2 girl
SOC: total	1 low
	2 medium
	-111 <missing>
	3 high
Risk behaviours (degree of)	1 low
	2 medium
	3 high
	-111 <missing>
Bullying prevalence at school level	1 above average
	2 below average
	-111 <missing>

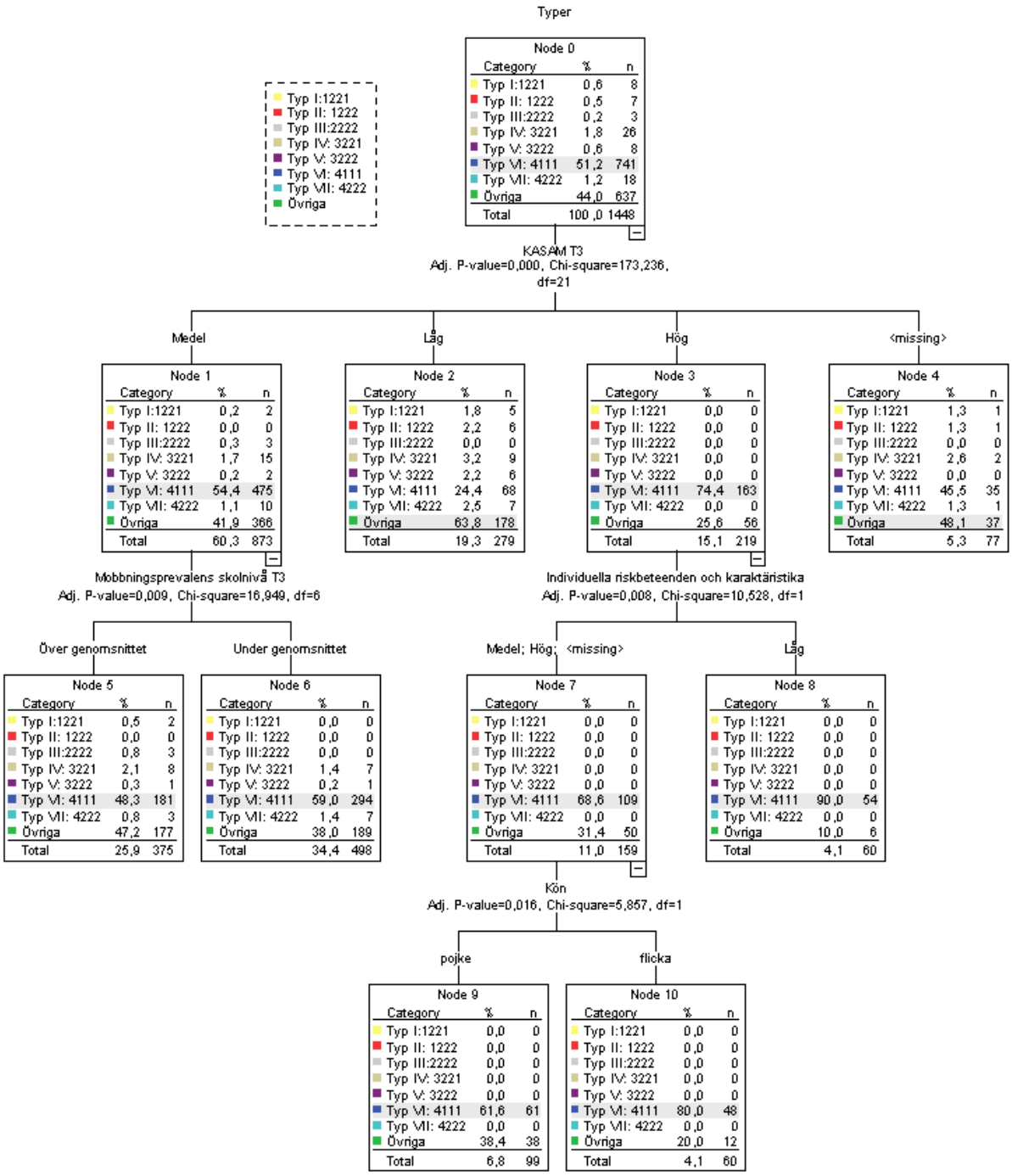
In the analysis, internal non-response (missing) is treated as a predictor category. For predictors at the ordinal and nominal levels, the algorithm generates the best set of categories by taking into account all other information contained in data about individuals belonging to the missing category. The algorithm then identifies the category which exhibits the highest similarity with the missing category and finally determines if the missing category should be merged with the category most similar to it or if it should be dealt with as a separate category.

The use of SPSS Decision Tree (CHAID) creates a so-called tree diagram, which presents the results graphically, and risk- and classification tables. The risk- and classification tables provide information as to how well the model functions, that is to say the extent to which the category value predicts belonging to the various types.

The tree diagram (Diagram 8) demonstrates that differences relating to a pupil's gender, his/her degree of risk behaviours and characteristics, the level of the individual's SOC and the bullying prevalence at school level have a bearing on the individual's type affinity. From the diagram, it may be read that an individual's SOC is the best predictor for determining the individual's type affinity (the first level in the diagram). At the second level, it appears that *the prevalence of bullying at school level* and the level of *the individual's risk behaviours and characteristics* function as discriminating factors. *The prevalence of bullying at school level* only predicts group affinity under the precondition of the pupil having average (medium) SOC. *The pupil's risk behaviours and characteristics* only predict affinity to the different types under the precondition that the pupil belongs to the sub-group which has high SOC. The pupil's *gender* only predicts type affinity under the precondition that the pupil has an average (medium) or high SOC and average (medium) or high degree of risk behaviours and characteristics.

The risk estimate in this case amounts to 0.411, indicating that misclassification is around 41%. The classification table corresponds with the risk estimate. The table shows that the model classifies around 59% of individuals correctly. A closer inspection shows, moreover, that the model correctly predicts belonging to Type VI: 4111 in 86% of the cases.

DIAGRAM 8: Tree diagram: CHAID-Model (DECISION TREE)



The end nodes (n=279, n=77, n=375, n=498, n=60, n=99, n=60) constitute seven sub-groups capturing how variations in various predictors affect type affinity. In what follows, we shall therefore test statistically the extent to which the individual's type affinity may be explained by various configurations based on the individual's gender, risk behaviours and characteristics and SOC, as well as the prevalence of bullying at school level. The analysis was performed using Prediction-CFA. The table below summarizes what characterizes the different nodes that appear

in the diagram above. The table provides information as to how the sub-groups differ, taking into account the outcome of the various predictors.

TABLE 21: Membership of sub-groups

NODE ID KKRM	membership of sub-groups				Frequency	
	SOC	Gender	Risk behaviours	Prevalence of bullying at school level	absolute	relative
2	1	.	.	.	279	19.3
4	-111	.	.	.	77	5.3
5	2	.	.	1	375	25.9
6	2	.	.	2	498	34.4
8	3	.	1	.	60	4.1
9	3	1	2.3,-111	.	99	6.8
10	3	2	2.3,-111	.	60	4.1
Total					1448	100.0

The statistical analysis (see table 22) indicates that certain predictors are more important in relation to pupils' type affinity than others, and that variations in certain predictors affect affinity in different ways. It appears that *low SOC, high SOC in combination with a low degree of individual risk behaviours,* and *high SOC and medium/high individual risk behaviours in combination with being female* are the categories or combinations of categories that predict pupils' type affinity to a greater extent than might be expected by chance alone.

To be even more precise, *low SOC* is the predictor that best explains pupils' belonging to *Type II* and *Type V*. This means that it occurs more commonly than may be expected by chance that pupils belonging to *Type II* (bully-victims with no absenteeism, who do not have someone to be with during breaks and do not obtain pass grades) and *Type V* (victims with no absenteeism, who do not have someone to be with during breaks and do not obtain pass grades) has low SOC. Where *Type VI* (pupils who are not involved in bullying as victims, bullies or both, who have absence from school, have someone to be with during breaks and obtain pass grades) is concerned, it is a combination of predictors that determines type affinity. For pupils belonging to Type VI, it is more common than may be expected by chance that they have high SOC and a low degree of individual risk behaviours or, if they are girls, high SOC and a medium/high degree of risk behaviours. This is underlined by the fact that it is less common than may be expected by chance that pupils belonging to Type VI have low SOC.

TABLE 22: Results Prediction-CFA of types in relation to nodes

			Types								
			Type I:1221	Type II: 1222	Type III:2222	Type IV: 3221	Type V: 3222	Type VI: 4111	Type VII: 4222	Other	Total
Terminal Node Identifier	2	Count	5	6	0	9	6	68	7	178	279
		Expected Count	1.541	1.349	0.578	5.010	1.541	142.776	3.468	122.737	279.000
		Adjusted Residual	3.109**	***4.468*** T***	-0.847	2.002	***4.008*** T***	***-9.967*** AT***	2.124*	***7.418*** T***	
	4	Count	1	1	0	2	0	35	1	37	77
		Expected Count	0.425	0.372	0.160	1.383	0.425	39.404	0.957	33.874	77.000
		Adjusted Residual	0.908	1,060	-0.411	0.545	-0.672	-1.032	0.045	0.738	
	5	Count	2	0	3	8	1	181	3	177	375
		Expected Count	2.072	1.813	0.777	6.733	2.072	191.903	4.662	164.969	375.000
		Adjusted Residual	-0.058	-1.568	2.933**	0.572	-0.867	-1.308	-0.900	1.454	
	6	Count	0	0	0	7	1	294	7	189	498
		Expected Count	2.751	2.407	1.032	8.942	2.751	254.847	6.191	219.079	498.000
		Adjusted Residual	-2.054*	-1.920	-1.255	-0.809	-1.307	4.333**	0.404	-3.352*	
	8	Count	0	0	0	0	0	54	0	6	60
		Expected Count	0.331	0.290	0.124	1.077	0.331	30.704	0.746	26.395	60.000
		Adjusted Residual	-0.590	-0.551	-0.360	-1.070	-0.590	***6.145*** T***	-0.888	***-5.418*** AT***	
	9	Count	0	0	0	0	0	61	0	38	99
		Expected Count	0.547	0.479	0.205	1.778	0.547	50.662	1.231	43.552	99.000
		Adjusted Residual	-0.768	-0.718	-0.470	-1.394	-0.768	2.153	-1.157	-1.165	
	10	Count	0	0	0	0	0	48	0	12	60
		Expected Count	0.331	0.290	0.124	1.077	0.331	30.704	0.746	26.395	60.000
		Adjusted Residual	-0.590	-0.551	-0.360	-1.070	-0.590	***4.562*** T***	-0.888	-3.824**	
Total		Count	8	7	3	26	8	741	18	637	1448
		Expected Count	8.000	7.000	3.000	26.000	8.000	741.000	18.000	637.000	1448.000

***p<.001 **p<.01 *p<.05. Prediction-CFA Types (T) and antitypes (AT) based on result for the binomial test using Holm's correction. Bonferroni-adjusted alpha = .0009. Chi^2 for CFA model = 205.04, df = 42 p = .000000.

In table 23, the individual predictors which are most important for affinity to the various types have been specified. It appears from the table that the predictors manifest themselves differently depending on the type to which the pupil belongs.

TABLE 23: Types in relation to predictors

			Types					
			Type II:1222	Type V: 3222	Type VI: 4111	Type I, III, IV, VII	Other	Total
Predictors (Nodes)	Low SOC	Count	6	6	68	21	178	279
		% within Types	85.7%	75.0%	9.2%	38.2%	27.9%	19.3%
	High SOC and low degree of individual risk behaviours	Count	0	0	54	0	6	60
		% within Types	0.0%	0.0%	7.3%	0.0%	0.9%	4.1%
	High SOC, medium/high individual risk behaviours and female	Count	0	0	48	0	12	60
		% within Types	0.0%	0.0%	6.5%	0.0%	1.9%	4.1%
	Others	Count	1	2	571	34	441	1049
		% within Types	14.3%	25.0%	77.1%	61.8%	69.2%	72.4%
Total		Count	7	8	741	55	637	1448
		% within Types	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

That low SOC is crucial for belonging to Type II and Type V is also confirmed by the column proportions test in table 24. The test shows that there are statistically significant differences between Type II and Type V compared with other types where low SOC is concerned.

TABLE 24: Column proportions test of types in relation to predictors.

Row of row variable (Node ID)	Columns tested of column variable (CFA types)	z-value	p-value	Against the alpha level = significant?	Against the Bonferroni adjustment = significant?	Against the Holm adjustment = significant?	Against the Holland-Copenhaver adjustment = significant?	Against the Benjamini-Hochberg adjustment = significant?
1	1 vs2	.51755	.60477					
1	1 vs3	6.75052	.00000	yes	yes	yes	yes	yes
1	1 vs4	2.38891	.01690	yes				yes
1	1 vs5	3.36498	.00077	yes	yes	yes	yes	yes
1	2 vs3	6.20592	.00000	yes	yes	yes	yes	yes
1	2 vs4	1.96619	.04928	yes				
1	2 vs5	2.92924	.00340	yes	yes	yes	yes	yes
1	3 vs4	-6.58591	.00000	yes	yes	yes	yes	yes
1	3 vs5	-9.06986	.00000	yes	yes	yes	yes	yes
1	4 vs5	1.60947	.10751					
2	3 vs5	5.75491	.00000	yes	yes	yes	yes	yes
3	3 vs5	4.16631	.00003	yes	yes	yes	yes	yes
4	1 vs2	-.51755	.60477					
4	1 vs3	-3.89693	.00010	yes	yes	yes	yes	yes
4	1 vs4	-2.38891	.01690	yes				yes
4	1 vs5	-3.11604	.00183	yes	yes	yes	yes	yes
4	2 vs3	-3.45421	.00055	yes	yes	yes	yes	yes
4	2 vs4	-1.96619	.04928	yes				
4	2 vs5	-2.68066	.00735	yes		yes	yes	yes
4	3 vs4	2.55348	.01067	yes				yes
4	3 vs5	3.28006	.00104	yes	yes	yes	yes	yes
4	4 vs5	-1.13683	.25561					

* Alpha level = 0.05

The test also confirms that high SOC in combination with a low degree of individual risk behaviours or, for girls, a high SOC in combination with a medium/high degree of individual risk behaviours is crucial for belonging to Type VI.

Thus, we can conclude that pupils' SOC is of crucial importance in relation to their ability to perform at school. On the basis of this result, a reasonable interpretation could suggest that any victimization affects pupils' ability to comprehend and predict their surroundings, to manage and control stressors and to make sense of existence, which, by extension, also affects their ability to perform academically.

Bullying and relationship with teachers

Previously in this report, we have examined risk factors in the form of experience of bullying (as victims, bullies or both), absenteeism and social relations with peers in relation to academic performance. The deeper analysis undertaken in order to find similarities in patterns regarding combinations of these factors showed, among other things, that the academic performance of the victimized pupils varied with their sense of coherence. The social environment and relationships within the school environment thus appear to be of great importance in understanding the academic performance of young people. Feeling attachment and adjusting to school are important prerequisites of positive school results (Simons-Morton et al., 1998). This includes positive relationships with others in the school environment. According to research, a positive learning environment may be characterized as a place where pupils, in interaction with others, can develop their own abilities. This interaction does not only occur between pupils but also between teachers and pupils. Trusting, safe relationships between teachers and pupils are an important precondition of pupils' learning (Pianta, Stuhlman & Hamre, 2002). Research has shown that good relations and perceived support from teachers are important factors for positive school attachment and academic performance (Pianta & Steinberg, 1992). Studies also indicate, however, that victimized pupils generally experience a lower degree of support from their teachers than pupils who have no experience of being bullied (Hellfeldt et al., 2014). Investigating pupils with bullying experiences in relation to their teachers is therefore important in order to gain a deeper understanding of how bullying influence pupils' well-being and school situation, and to understanding the factors that can increase pupils' likelihood to achieve good school results. Thus, in this section, we investigate how pupils with different experiences of bullying experience and perceive their teachers.

Table 25, below, presents descriptive statistics concerning how the four groups experience relations with their teachers regarding aspects such as trust and being treated with respect. All

aspects investigated may be regarded as fundamental to good relations and the experience of support and consideration from teachers and, by extension, fundamental to pupils' academic performance (Klem & Connell, 2004; Wentzel, 1998b). The table also reports a comprehensive measurement of teacher relations, based on an index which summarizes all the questions relating to pupils' perceived support from their teachers. Pupils who obtained a value of three or above on the new scale (which corresponds to answer alternatives 'corresponds partly' to 'well/exactly') are considered to experience support from their teachers. The pupils who did not agree partly with the various statements, i.e. those who obtained a value below three on the new scale (corresponding with answer alternatives 'corresponds poorly' or 'not at all') are considered to experience a low level of support from their teachers. This procedure makes it possible to investigate which groups of pupils that reports higher or lower levels of teacher support, or have positive or negative relationships with their teachers. The table also report which column proportions that show significant mean differences.

Table 25 shows that significantly more pupils from the group bullies/victims experience low levels of trust in their teachers compared to pupils who were not involved in bullying. Of those belonging to the bully/victim group, 30% report that the statement about being able to trust their teachers corresponds either 'not at all' or 'poorly'. This may be compared with the corresponding 14.1% of pupils who were not involved in bullying either as bully, victim or both. It also appears that 59% of the pupils who were not involved in bullying during the measurement period agree completely or exactly with the statement that they can trust their teachers. Again, this may be compared with victims and bully-victims, who agreed that they could fully trust their teachers to a significantly lower extent (48.5% and 42.9% respectively).

Regarding the pupils perception of teachers care, a similar pattern emerges for bully-victims and victims, who experience significantly lower levels of care from their teachers. Of the victimized pupils, 19.7% report that the statement about the teacher caring for them corresponds either 'not at all' or 'poorly'. The corresponding proportion in the bully-victim group is 29.9%, which is significantly higher than for pupils not involved in bullying (6.1%) and those who bullied others (6.3%). On the other hand, victims and bully-victims reports to a significant lower extent that they agree partly of exactly with the statement that they feel that the teacher cares for them, compared with pupils who were not involved in bullying (see table 25).

Further, regarding the question about the teacher treating pupils with respect, the result shows that victims (34.4%) and the bully-victim group (38.2%) to a significantly higher extent that the statement corresponded not at all or poorly with their perceptions, compared with a figure of 13.5% for non-involved pupils. Similarly, victimized pupils (13.7%) or pupils in the bully-

victim group (21.2%) to a lower extent perceive that teachers treat them and their classmates with respect compared with both bullies (7.9%) and those not involved in bullying (5.6%) during the same measurement period.

Note also, from the collated measure for teacher support, that pupils who were victimized (40.4%) or were bully-victims (44.1%) at some time during T1 to T3 perceived significantly lower support from their teachers compared with both those who were bullies at some time during the same period (17.2%) and those who were not involved in bullying at all (21.7%). It is interesting to note that it seems primarily to be those who have experienced being bullied who have the worst relationship with their teachers, whether they are victimized or belong to the bully-victim group, rather than those who belong to the bully category during the same period. Thus the pupils who perhaps have the greatest need for support and help from their teachers to the lowest extent perceive such suppport.

TABLE 25: Pupils with experience of bullying and their perceived support from teachers

		Not involved (a)	Victims (b)	Bullies (c)	Bully/victims (d)
		% (number)	% (number)	% (number)	% (number)
I can trust my teacher if I have anything personal I want to tell them	Corresponds not at all/poorly	14.1 (194)	20.2 (40)	17.2 (11)	30 [a] (21)
	Corresponds partly	26,9 (370)	31.3 (62)	25 (16)	27.1 (19)
	Corresp. well/exactly	59 [b d] (813)	48.5 (96)	57.8 (37)	42.9 (30)
I feel that my teachers care about me	Corresponds not at all/poorly	6.1 (83)	19.7 [d] (39)	6.3 (4)	29.9 [b d] (20)
	Corresponds partly	24.4 (333)	29.3 (58)	29.7 (19)	17.9 (12)
	Corresp. well/exactly	69.6 [b d] (951)	51 (101)	64.1 (41)	52.2 (35)
The teachers treat me and my classmates fairly	Corresponds not at all/poorly	13.5 (184)	34.4 [a c] (67)	17.5 (11)	38.2 [a c] (26)
	Corresponds partly	28.2 (385)	29.7 (58)	19 (12)	22.1 (15)
	Corresp. well/exactly	58.4 [b d] (798)	35.9 (70)	63.5 [b d] (40)	39.7 (27)
The teachers treat me and my classmates with respect	Corresponds not at all/poorly	5.6 (76)	13.7 [a c] (27)	7.9 (5)	21.2 [a c] (14)
	Corresponds partly	22.9 (311)	34.5[a] (68)	17.5 (11)	22.7 (15)
	Corresp. well/exactly	71.5 [b d] (972)	51.8 (102)	74.6 [b d] (47)	56.1 (37)
Perceived supp. from teachers	Low level	21.7 298)	40.4 [a c] (80)	17.2 (11)	44.1 [a c] (30)
	High level	78.3 [b d] (1076)	59.6 (118)	82.2 [b d] (53)	55.9 (38)

Finally, we examine if the extent to which the risk of reporting low levels of perceived support from teachers increases depending on the pupils' experiences of bullying.

Previous studies have shown that victimized pupils perceive low levels of support from teachers to a much greater extent (Rigby, 2000). The results of this study show (see table 26) that 28.9% of pupils who were bullied at some time during T1-T3 perceive low levels of support

from their teachers. The table shows that, for the pupil group as a whole, the experience of being bullied is the greatest risk factor (RR=1.26) for perceiving low levels of support from their teachers. Pupils who were bullied at some time during the measurement period run a 26% higher risk of perceiving low levels of support from their teachers than pupils who were not. The results also show that bullied boys run a higher risk of perceiving low levels of support from their teachers than non-bullied boys. Of the boys who were bullied at some time during the measurement period T1-T3, 35.7% perceive low levels of support from their teachers. The victimized boys' relative risk value of 1.4 indicates that those who experienced bullying during the measurement period run a 40% higher risk of perceiving low levels of support from their teachers than non-bullied boys. This can be compared with the group of girls victimized during the period T1-T3, where 11.5% perceived lower levels of teacher support. The risk of perceiving low levels of support from their teachers is 1.14 times higher for victimized girls than for non-victimized girls. Where girls are concerned, however, the result should be regarded with a certain amount of caution.

When it comes to pupils who were bullies at some time during T1-T3, the relative risk values for the group as a whole, and for boys and girls respectively, were not significant. The results indicate that boys or girls who bully others do not run a higher risk of perceiving low levels of support from their teachers. Conversely, the analysis shows that 26.2% of pupils in the bully-victim group perceived low support from their teachers. Pupils belonging to the bully-victim group run a significantly higher risk of perceiving low levels of support from their teachers (RR=1.23) compared with pupils who neither bullied others or were bullied during the same period. When the boys and girls of this group are analysed separately, however, it appears to be primarily boys who run a significantly higher risk of perceiving low levels of support from their teachers in comparison with non-involved boys (RR=1.48). For boys in the bully-victim group, there was a 48% higher risk of perceiving low levels of support from teachers compared with boys who were not involved in bullying. For girls belonging to the bully-victim group, the relative risk was not significant.

TABLE 26: Bully and victim profiles in relation to perceived teacher support

			For cohort fail grades 2014			
				CI		
		n =	RR	Lower	Upper	*p*
	Percentage who perceive low support from their teachers					
Victims at some time during T1-T3 compared with pupils without experience of bullying	28.9%	24	1.26	1.09	1.45	0.000
Boys	35.7%	15	1.40	1.12	1.762	0.000
Girls	11.5%	9	1.14	0.969	1.347	0.031
Bullies at some time during T1-T3 compared with pupils without experience of bullying	26.2%	11	0.99	0.97	1.02	0.960
Boys	25%	6	1.01	0.966	1.045	0.800
Girls	27.8%	5	0.99	0.964	1.028	0.794
Bully/victims at some time during T1-T3 compared with pupils without experience of bullying	26.2%	16	1.23	1.088	1.379	0.000
Boys	32.6%	15	1.48	1.183	1.859	0.000
Girls	6.7%	1	1.01	0.946	1.070	0.821

To summarize, it may be said that being bullied, more than anything else, constitutes a risk for boys perceiving low levels of support from their teachers. Support as investigated in this study comprises the feeling that teachers care, the perception that teachers can be trusted and that teachers treat pupils and their classmates fairly and with respect. Victimized pupils' perceived lack of support is problematic not just because teachers' support is important for learning but also because it constitutes an important source of assistance in bullying situations. It is worth noting that victimized boys run a high risk of perceiving low levels of support from their teachers compared with non-victimized boys. Concerning pupils that bully or offend others the results show that the risk of perceiving low levels of support from their teachers, irrespective of gender, does not increase. On the other hand, the results show that boys who bully others and were bullied themselves (the bully-victim group) run a higher risk of perceiving low levels of support from their teachers compared with boys who are not involved in bullying. Boys thus appear to be particularly influenced by the consequences of bullying both in terms of social support from their teachers and their ability to perform academically.

Conclusion

Learning and being able to perform at school is not only about acquiring basic values and knowledge for a future life as a working citizen. It is also a precondition of pupils' self-realization. For a pupil to be able to realize him/herself, self-confidence, self-respect and a feeling of self-esteem are required (Honneth, 1995). This is based on the pupil being recognized in various forms of relations which may be described in terms of: primary relations (in the sense of emotionally imprinted social bonds), legal relations (rights) and relations based on a community of shared values (solidarity). To be recognized through these relations makes it possible to realize one's potential. Realizing oneself is thus conditional upon, among other things, being ascribed the same rights and obligations as all others and simultaneously being recognized for one's unique qualities. In the long term, this means pupils being granted the same value as others on the strength of becoming adequate citizens. Self-realization is thus achieved through various relations which make it possible for individuals to develop a positive relationship with themselves (Thomas *et al*., 2016).

To receive recognition or acknowledgment from others through social relations is, according to Honneth, a basic human need. Those denied recognition, who are subjected to degrading treatment, rendered invisible or misrepresented, suffer damage to their self-esteem, which in turn hampers their development. This is a reason why the task of schools is not solely to develop pupils' knowledge of different subjects. Schools are also to contribute to the development of pupils' ability to show consideration for others; pupils are to be included and made to participate; and pupils are to receive attention for their unique abilities and achievements. In this context, Honneth's theoretical argument concerning the fight for acknowledgment may help to explain and increase understanding of how pupils' social, personal and academic development are intimately interwoven. Recognition is made possible through different relations, relations that may be satisfied in different ways within the school environment. The fundamental relations comprise *primary relations*. Primary relations are characterized by emotional bonds between a small number of people. Initially, primary relationships concern children and their guardians, but as the child ages, friendships and love relationships are also included. By means of establishing friendships, a pupil feels well-liked by peers that he/she likes. The individual thus feels seen and granted attention by others. *Self-confidence* is based on the pupil's feeling confident that he/she will continue to be the subject of another person's consideration. Through primary relations, the pupil's need for emotional support is recognized through the consideration of others. Pupils' self-confidence is served by the school preventing, uncovering and dealing with degrading treatment and bullying through its **safety work**. The

results from the analysis also show that the presence of positive peer relations and the absence of degrading treatment and bullying benefit pupils' ability to perform academically.

The second form of relations, which is of a more formal character, comprises *legal relations*. Legal relations concern the relations through which the individual is recognized as a fully deserving partner for interaction with the same rights to speech as all others. Pupils' rights are recognized through others showing respect for them and their showing respect for others. By means of this type of relation, pupils are recognized as being capable of taking a moral standpoint and weighing up alternative courses of action and are accorded the capacity of taking an active role in their own development. Legally guaranteed autonomy – everyone's equal rights – instils *self-respect*. Pupils' self-respect is benefitted by effective **work for equal treatment** at school through which all forms of harassment and discrimination may be prevented or stopped and the equal value of all pupils promoted. This applies to school activities or pedagogy that promotes respect for the equal value and rights of all by integrating equal treatment work in everyday pedagogical practice on the basis of the school's basic values assignment or on the protected grounds for discrimination. This may, for example, be to do with identifying and uncovering norms that produce or reproduce inequality in various ways, not least amongst pupils and school personnel.

Questions regarding pupils' recognition as fully deserving partners in the social community with the same rights as all others is regulated by the legislation concerning harassment and discrimination based on gender, gender identity/expression, ethnicity, religious or other beliefs, disability, sexual orientation and age. When it comes to degrading treatment in the sense of *"conduct that violates the dignity of a child or student without being discrimination under the Discrimination Act"* (Section 6, sub-section 3 Swedish Education Act), it can be much more difficult for school personnel to uncover. It is nevertheless part of the social interaction which takes place at school and affects not just pupils' ability to perform academically but also their social relations. If pupils' legal conditions – everyone's equal rights – are not respected and complied with, it negatively affects not only pupils' opportunities to be recognized as fully deserving partners for interaction but also their self-respect.

For example, pupils who, for different reasons, are treated as different, and thus feel no affinity, tend to withdraw from school, which, in the long run, inhibits their ability to perform in terms of knowledge. The analysis further indicates that absenteeism – truancy – increases the risk of failed grades.

The third form of relations is to do with a *community of shared values* (solidarity). In a community of shared values, pupils are recognized in relation to the values which apply within

a concrete community, within the framework, for example, of **the schools' academic merit system** (the scale of grades). The common feature is that the unique abilities of the individual in some respect are estimated and assessed as contributing to the best of the community. Pupils' *self-esteem* is promoted by their feeling valued on the strength of their personal qualities, abilities and (academic) achievements. Teachers' support and ability to listen to individual pupils' needs is key to pupils being able to progress and see their own value. Thus to create an educational environment where all pupils feel valuable and are recognized for their individuality is of the utmost importance. Working for safety and equality serves pupils' self-esteem through creating the conditions for a community of shared values (solidarity) by means, among others, of integrating issues concerning safety and equal treatment in everyday pedagogical practice. Being recognized and acknowledged for their personal qualities and abilities strengthens pupils' social/personal development and security, which, in the long term, benefits their academic development.

This argument may be illustrated by the following figure (Flygare & Johansson, 2016):

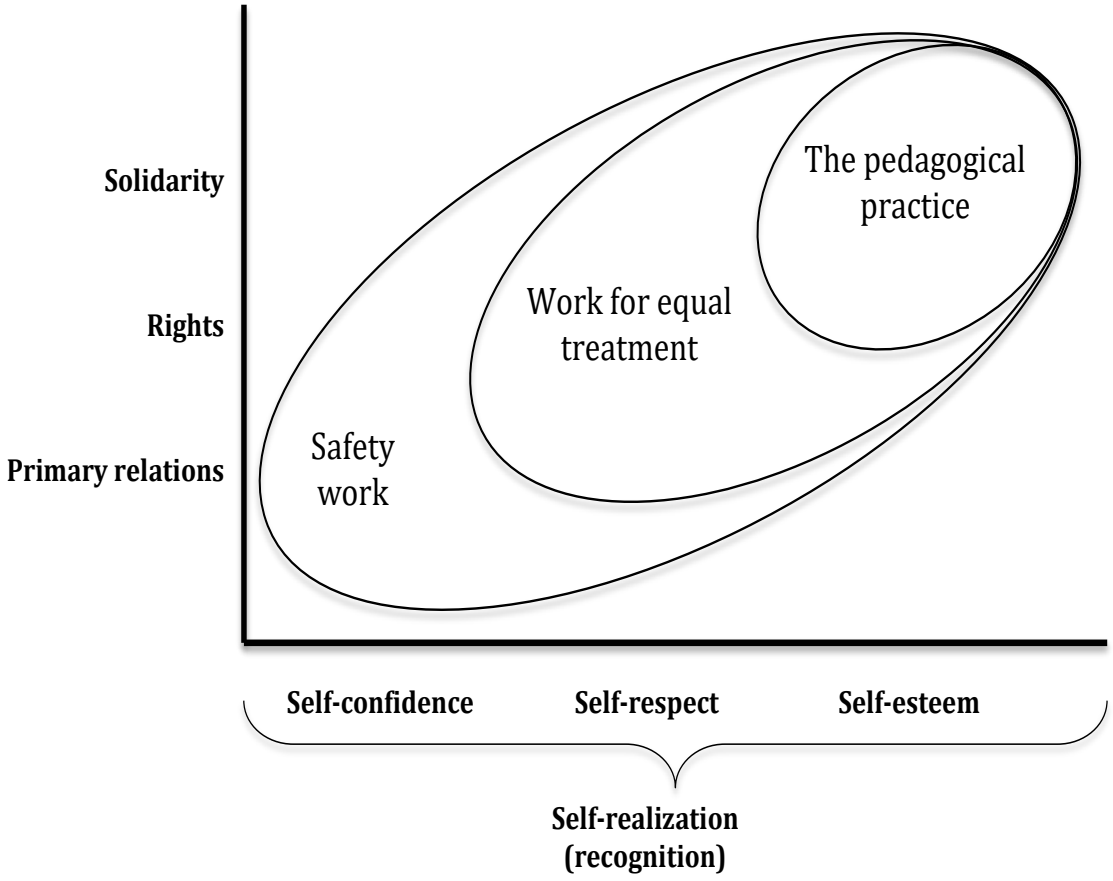


FIGURE 2: Pupils' development in relation to school as a social and an educational arena

According to Honneth, being denied recognition makes the development of a positive identity and self-realization impossible. To be denied recognition involves being subjected to some kind of physical abuse, social exclusion or degradation. Physical abuse threatens the individual's physical integrity and breaks down self-confidence. Exclusion threatens social integrity since the pupil is not recognized as a fully deserving partner for interaction with the same rights as all others, for example, on the grounds of ethnicity. This form of non-recognition breaks down the individual's self-respect. Being degraded, disparaged or humiliated for one's shortcomings breaks down the individual's self-esteem and threatens personal integrity. To put it another way, being subjected to degrading treatment, harassed, discriminated or bullied hampers pupils' social, personal and academic development. Creating conditions within which pupils may continue negotiating and renegotiating relationships vis-à-vis each other in the school context is thus a central issue for adults who deal with and work with pupils in different ways.

When, within the framework of the school's basic values mission or work for safety and equal treatment, teachers employ educational tools or exercises, they are assumed to be able to contribute not only to strengthening pupils' self-esteem and developing new knowledge but also other attitudes in relation to their classmates. Pupils who – taking into account the unique circumstances of others – are able to express themselves in an ethical and personally grounded position in their interaction with others have not only developed on a personal level but on a social level too. Getting pupils to behave in such a way when they are involved in relations work with their classmates and schoolmates, and not only during lessons, is in line with the school's overall goals – not just promoting knowledge but also educating pupils to become citizens of the community.

In order for this to work satisfactorily, however, participation and a school climate that allows for such participation are required. Studies show that when pupils may participate in school activities and influence their own actions, it has a positive effect on pupils' views of the school in general, which also strengthens a positive school climate (cf. Ahlström, 2009). Common attitudes, norms, values and participation are often highlighted as contributory factors to a positive school climate. A positive school climate is characterized by high quality relations and communication. If pupils feel recognized and satisfied, they also perform better (Walker, 2004).

Thus, it is impossible to ignore the importance of a positive school climate and open attitudes. A number of studies have shown that there are protective factors, both internal and external, that can support positive development and counteract adverse conditions. In these studies, it is possible to observe particular differences between pupils' performance at school level, in relation to the extent of absenteeism (truancy) and the inclination to continue studying. At

school level, differences cannot be explained with reference to the pupils' starting point but rather to a positive school climate (e.g. see Rutter, 2000; Giota, 2002; Sellström & Bremberg, 2006).

Swedish studies also point to the importance of the school climate as a protective factor where preventive work is concerned (Sivertun & Helldin, 2006). The child's school environment, the school's organization and work are important factors in preventing negative behaviour. Other studies have shown that heterogeneous group composition is linked to feelings of solidarity and thus a better social climate (Westling Allodi, 2005). One explanation of these links is that when a school shows the ability to fully accept and appreciate diversity in abilities and experience among its pupils, it also vigorously communicates democratic and humanistic values that improve both climate and well-being. Extensive research on inclusive environments also shows that teaching in heterogeneous groups does not adversely affect pupils' results. The results in this study also show that, for pupils with experience of bullying, the conditions under which they are expected to perform academically are influenced by the extent to which the pupil group may be considered homogenous or heterogeneous regarding the prevalence of bullying and other preconditions in the pupil group. A positive school climate is characterized by creativity, stimulation, learning, competence, safety, helpfulness, participation, influence and responsibility. A good school climate is thus a fundamental condition for strengthening positive social relations and behaviours and counteracting negative ones; at the same time, positive social relations are a precondition of creating and maintaining a good school climate.

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