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“IT DISTURBS THE WHOLE CLASS” DISCIPLINARY INFRACTIONS IN THE CLASSROOM AND THEIR RELATION TO PUPIL ACHIEVEMENT

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“מפריע לכל הכיתה” : בעיות משמעת בכיתה והקשר שלהן להישגי התלמידים

כרמל בלנק ויוסי שביט

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“It Disturbs the Whole Class” Disciplinary Infractions in the Classroom and Their Relation to Pupil Achievement

Carmel Blank and Yossi Shavit*

Abstract

In recent years, academics and policy makers, as well as parents and teachers, have become concerned with disciplinary infractions in the education system. Pupils spend the majority of their time in the classroom, and yet, the assumption that disciplinary infractions in class reduce learning time and are harmful to pupil achievement has not been examined empirically. The aim of this study is to examine how various class and school characteristics contribute to the level of disciplinary infractions in the class, and how these problems impact pupil achievement. The study's findings indicate that there are differences among classes within the same school with regard to the level of disciplinary infractions. It was also found that disciplinary infractions in class have a significant negative effect on pupil achievement, regardless of the pupil's behavior or past achievement level. From this it follows that an improvement in a school's disciplinary enforcement policy coupled with improvement in the teachers' treatment of pupils can contribute to the reduction of disciplinary infractions in class and lead to an improvement in achievement levels.

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Disciplinary infractions and violence in the education system have long concerned researchers and educators but in recent years interest in these issues has mounted (Nachshon-Sharon and Blass, 2010; Anderson and Kincade, 2005; Gregory et al., 2010; Kane, 2008; Kindiki, 2009; National School Climate Center, 2010; Van de Werfhorst et al., 2012).

The Taub Center's *State of the Nation Report 2010* published the results of an international study linking the low achievements of Israeli pupils in the 2003 TIMSS tests to the proliferation of disciplinary infractions in Israeli schools (Shavit and Blank, 2011). In the wake of that article, former Knesset member Dr. Einat Wilf put a proposal on the agenda for the Knesset plenum, saying:

The topic I wish to raise is the connection between discipline and the learning atmosphere in school on the one hand and pupil achievement on the other. For many years I have contended that instead of searching for the solutions and problems in things like class size, or how many teaching hours are delivered, or even the overall accusations sometimes leveled at teachers – my contention has been that the solution, and the problem of course, lies in the learning atmosphere in the schools.

To this, then-Minister of Education Gideon Sa'ar replied:

Fostering a secure climate, increasing discipline and reducing violence are defined as some of the primary goals that are being pursued by the education system in the current term [...] No one disputes the importance of establishing discipline in class. A class in which disturbances occur is one in which it is impossible to learn, and the achievements of the pupils in it are bound to suffer accordingly.¹

¹ The quotes from past MK Einat Wilf and Minister Gideon Sa'ar are taken from their speeches to the Knesset from December 7, 2011.

Policy reports from around the world also claim that disciplinary infractions in the classroom cut down on learning time for all pupils and thus harm achievement (Dinkes et al., 2007; Gottfredson et al., 2000).

Is this really the case? Surprisingly, despite the extensive research on disciplinary infractions and their relation to pupil achievement, their impact at the class level is almost unknown. This is the case even though the greatest part of the learning process takes place inside the classroom, and there are findings indicating that classroom characteristics have a greater effect on the learning experience and on pupil achievement than do those of the school (Hill and Rowe, 1996; Scheerens and Creemers, 1989). Until now, it has not been known whether there are differences among classes within the same school in the extent of disciplinary infractions and, if so, what may explain these differences.

The aim of the present study is to examine how various class and school characteristics contribute to the level of disciplinary infractions in the classroom, and how these infractions are related to pupil achievement. The study is based on a multilevel analysis that makes it possible to consider simultaneously the characteristics of the pupil, class, and school, and to examine the unique contribution of each level to achievement (i.e., the contribution of a pupil's personal disciplinary infractions, as opposed to disciplinary infractions of the class or school). This facilitates a comprehensive review of the issue in a context that follows the learning experience – pupils inside classes inside schools. Furthermore, the model takes into account the pupil's past achievement levels, thus controlling for the selection of relatively strong pupils in schools or classes with certain characteristics and weaker pupils in schools or classes with other characteristics.

1. Background: The Findings of Previous Studies

Factors that Affect Disciplinary Infractions

With regard to individual pupils, the factors related to the level of disciplinary infractions are gender, ethnicity, socioeconomic status, and age. Studies indicate that girls are less involved in disciplinary infractions and violence than boys (Benbenishty and Astor, 2005; Vaillancourt et al., 2008). In addition, the higher the pupil's socioeconomic status, the lower the level of disciplinary infractions (Gregory et al., 2010; Kinsler, 2013). Immigrants and minority group members tend to exhibit a higher level of disciplinary infractions (Shavit and Blank, 2011; Farkas et al., 2002). While some studies have found that disciplinary infractions decrease with advancing age or grade (Laufer and Harel-Fisch, 2003), others indicate to the contrary that the level of disciplinary infractions rises with advancing age or grade (Van de Werfhorst et al., 2012).

It has also been found that there is a relation between the composition of a school and the level of disciplinary infractions in it: the higher the socioeconomic status, the lower the level of disciplinary infractions, and the higher the percentage of immigrants or minority group members, the more disciplinary infractions there are (Barbieri and Scherer, 2012; Coleman and Hoffer, 1987; Khoury-Kassabri et al., 2009). While some studies have shown that school size contributes to the level of disciplinary infractions, others have found no such relation (DiPrete et al., 1981; Khoury-Kassabri et al., 2009 and 2005). In schools where the disciplinary policy is perceived to be clear, fair, and enforced, there are fewer disciplinary infractions, and support and fair treatment on the part of teachers can reduce involvement in disciplinary infractions and violence (Way, 2011; Arum, 2003; Esposito, 1999).

As noted, there are only a few findings regarding the effects of class characteristics on the level of classroom disciplinary infractions. Lavy and Schlosser (2007) found that a high percentage of girls in a grade level

raises average pupil achievement and also reduces the amount of disciplinary problems. Lazear (1999) contends that since almost every pupil engages in disturbances to a certain extent, it may be assumed that the larger the class, the more disciplinary infractions there will be. All the same, this hypothesis was not tested empirically.

The Relationship Between Disciplinary Infractions and Pupil Achievement

Over the years it has been found that pupil achievements were higher in schools where the disciplinary climate and pupil behavior were positive, and that the achievements of pupils who are well-behaved is higher on average (Arum and Velez, 2012; Coleman et al., 1982; Lee and Bryk, 1989). However, there is some debate amongst researchers regarding the causal relation between discipline and achievement. Whereas some argue that discipline is a precondition for effective learning and so disciplinary infractions inevitably harm achievement, others contend that low achievement arouses feelings of frustration and alienation toward school which are then expressed in disciplinary infractions (Jenkins, 1995; Oakes et al., 1992; Simmons and Blyth, 1987; Weinstein, 1989).

It has also been found that the disciplinary climate in a school and the number of disciplinary infractions in it can have an effect on pupil achievement, regardless of the pupil's personal behavior (Bulach et al., 1995). Possible explanations for this are that high levels of undisciplined behavior wear down the teachers, and also damage the ability of all pupils to concentrate (Burke et al., 1996; Gottfredson et al., 2000). In addition, pupils' perceptions of the fairness of disciplinary enforcement at a school as well as perceptions of teacher fairness also have an effect on achievement (Benbenishty et al., 2005; Arum and Velez, 2012).

In this matter, too, little is known about what happens at the classroom level. Carrell and Hoekstra (2010) found that the addition of a single child with behavioral problems to a class brings pupil grades down by almost 0.2 percent. Others have contended that disciplinary problems are

likely to make teachers develop a negative attitude toward a specific class, and it is that negative attitude that harms pupil achievement (Hastings and Bham, 2003).

The present study seeks to examine several questions:

1. Are there differences in the level of disciplinary infractions among different classes in the same school?
2. Which class and school characteristics explain the disciplinary infractions in a class?
3. Are disciplinary infractions in a class found to harm pupil achievement even when controlling for the respective effects of the pupil's personal disciplinary infractions, disciplinary infractions in the school, and the pupil's past achievement?

2. Methodology

The study is based on an analysis of the MEITZAV (Measures of School Efficiency and Growth) tests and the school climate questionnaires, which are administered by RAMA – the National Authority for Measurement and Evaluation in Education. The MEITZAV tests are meant to examine the proficiency level of pupils in primary school (second and fifth grades) and middle school (eighth grade) in four core subjects of the educational program: language skills (Hebrew or Arabic), English, mathematics, and science and technology. Each year, about 25 percent of all the pupils are tested on each of the four subjects. A few months after the test, school climate is measured in participating schools.

In addition to the MEITZAV and school climate questionnaire data, the study is based on the Ministry of Education's pupil files that include pupil background data (parental education level, ethnic origin, etc.), as well as on class and school files that provide information on class size, school size, the sector the school belongs to, and its socioeconomic

classification.² With the help of a unique identification code assigned to each pupil and each school by the Central Bureau of Statistics, the various files were merged to create the database for the present study. In these files it was possible to locate pupils who were in the eighth grade in 2009 and in the fifth grade in 2006, and to construct longitudinal data and measure the achievement of each pupil at two points in time – in the fifth grade and in the eighth grade. Due to the unique sampling method of the MEITZAV tests, measurements at two points in time are not available for all the pupils, but only for about a quarter of them (about 10,000 pupils each year); tests show, however, that there are no notable differences between those who were tested at two points in time and those tested only once.

The questions on the school climate questionnaires concerning the class, including the disciplinary infractions in a class, relate only to the homeroom class, and so, this study focuses on pupil achievement in language skills. (This is the only subject that is studied in the homeroom class, as opposed to English and mathematics where students are grouped by their level of proficiency, and as opposed to sciences, which in some schools are studied in laboratories.)

The analysis focuses on Jewish schools only for two reasons. First, schools in the Jewish sector are tested in Hebrew, whereas schools in the Arab Israeli sector are tested in Arabic, making it problematic to include both sectors in the same analysis. Furthermore, the large differences between schools in the two sectors are deserving of a separate analysis. Likewise, the analysis was restricted to non-religious state schools, since the literature shows that there are large differences between religious and non-religious state schools in pupil composition, the level of disciplinary

² The classification is based on the Strauss Nurture Index which is used by the Ministry of Education to help decide on the allocation of resources to schools. The index is based on whether or not the school is located in the periphery or center of the country, on the average levels of pupils' parental education and income, and on the percentage of immigrants in the school from developing countries.

infractions and how such problems are handled. These differences require a separate analysis.

The analysis dealing with the variables that affect disciplinary infractions in class includes 768 eighth grade classes from 191 schools in the Jewish non-religious state sector in 2009. In the second part of the analysis, which deals with the effect of disciplinary problems on pupil achievement, the sample includes only pupils in Jewish non-religious state education who were tested in Hebrew in 2009 and in 2006, when they were in the fifth grade. This sample includes 2,422 pupils from 181 classes in 64 schools.

The Study Variables

Pupil, class, and school characteristics

Variables examined for pupils were gender, age, average parental education (in years of study), number of siblings, and achievements in Hebrew in the fifth and eighth grades. Pupils were also distinguished by whether they were born in Israel or elsewhere. A pupil's personal disciplinary infractions were measured by the number of absences and late arrivals as self-reported in the previous month (in the climate questionnaires).

Classroom variables were the percentage of girls in a class, average parental education, class heterogeneity (according to the standard deviation in parental education), and class size. The perceived level of teacher fairness in the class was examined employing the class average in agreement with the following statements: "In my class, there are pupils who no matter what they do, the teachers will never treat them nicely," and "In my class, there are pupils who the teachers favor over other pupils."

The school variables that were examined were school size and its socioeconomic standing (see footnote 1).

Discipline variables

Disciplinary infractions at the class level were estimated as a principal component factor of class averages of pupils' agreement with the following statements: "The pupils in my class treat the teachers with respect," "Very often the pupils make noise and commotion in class and disrupt study," "In my class there are pupils who are insolent toward the teachers," and "The teachers have to wait a long time at the start of class until the pupils stop making noise."

Disciplinary infractions at the school level were estimated as a principal component factor of the averages (for seventh and eighth grade pupils) of disciplinary infractions in class, the level of vandalism and bullying at the school (measured by agreement with the statement: "In school there are gangs of pupils who act violently, annoy, and hurt other pupils"), and the level of pupil victimization (pupil reports on how frequently they have been beaten up, cursed, shoved, or ridiculed).

Disciplinary enforcement policy at the school was estimated as a factor of the school average of pupils' agreement with the following statements: "In school many activities are undertaken to prevent violence and to deal with it," "During recesses there are always teachers in the yard whose task is to supervise so no violence occurs," and "When there are incidents of violence at school the teachers know about it."

All the variables at the class and school levels were also controlled for at the pupil level, to ensure that the context was measured (e.g., the disciplinary infractions in the class) and not a pupil's subjective perception (e.g., individual perception of disciplinary infractions in the class).

3. Disciplinary Infractions in the Class and Their Influence on Pupils: Findings

Are There Differences in the Level of Disciplinary Infractions Between Different Classes in the Same School?

Since most of the studies dealing with discipline and achievement have focused on either pupils or schools, it is necessary to examine whether there are any differences at all in the level of disciplinary infractions between classes in the same school, or whether all the differences are between schools. A hierarchical analysis of the data shows that about two-thirds of the difference in disciplinary infractions is related to the attributes of a specific class (e.g., the number of pupils in it) and not those of the school (e.g., the number of pupils in a school, which is the same for all the classes).

Thus the assumption of most researchers that the focus should be on the school while ignoring the class is incorrect. A school's attributes do appear to have a significant part in explaining the disciplinary infractions in a class, but those problems depend mainly on the unique characteristics of each class within the school.

Which Class and School Characteristics Explain the Disciplinary Infractions in a Class?

Contrary to expectation, no statistically significant differences were found in the level of disciplinary infractions in classes between schools that differ in size or on the Strauss Nurture Index. Class size or the percentage of girls among all the pupils also had no effect on the level of disciplinary infractions. However, the extent of disciplinary infractions and the enforcement policy at a school have an effect on the level of disciplinary infractions in a class: the more disciplinary infractions there are in the school, the more infractions there are in the class; and, the

stricter the enforcement policy, the fewer the number of disciplinary infractions in the class.

Differences in the level of disciplinary infractions were also found between classes differing in their socioeconomic composition. The level of discipline is higher in classes of pupils from a higher socioeconomic background, i.e., whose parents are more educated.

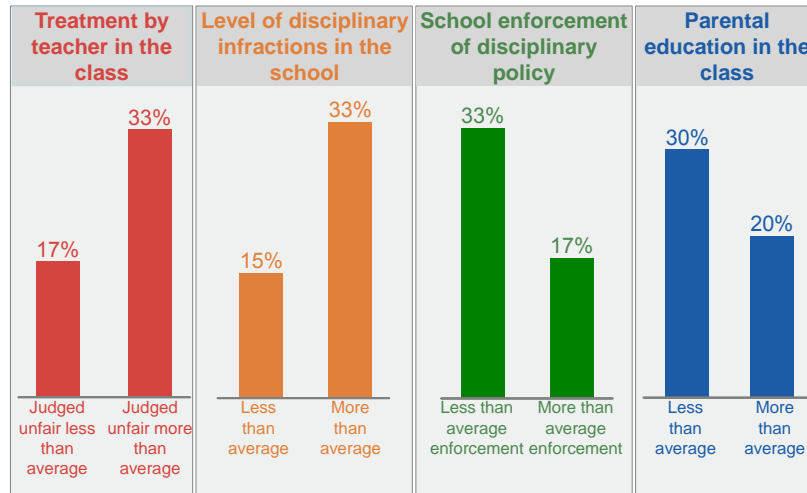
The pupils' perception of the teachers' treatment of them as unfair has the opposite effect: the less fair that attitude is perceived to be, the higher the level of disciplinary infractions. The heterogeneity of a class is positively related to the level of disciplinary infractions: the more heterogeneous the class is in terms of the background of its pupils, the more disciplinary infractions there are in it.

Figure 1 shows the effect of the different class and school characteristics on the disciplinary infractions in a class. It presents the percentage of undisciplined classes (classes located in the upper quartile of disciplinary infractions) among various schools and classes with different characteristics.³

The figure indicates that in schools with a relatively strict disciplinary enforcement policy, the percentage of undisciplined classes is about half the rate of schools with a less strict enforcement policy. In parallel, when the teachers' attitudes are perceived to be unfair, the rate of undisciplined classes rises to double what it is in classes where the teachers' treatment is perceived to be fair.

³ This figure is based on descriptive statistics only, but the various classes and school characteristics were found to be distinctive also in a multivariate hierarchic regressive analysis, in which the class and school characteristics (class size, school size, etc., as described above) were controlled for.

Figure 1
Percentage of undisciplined classes*
 out of all classes in the study



* Classes in the upper quartile in terms of disciplinary infractions

Source: Yossi Shavit and Carmel Blank, Taub Center

Data: RAMA (authors' calculations)

Do Disciplinary Infractions in the Class Harm Pupil Achievement Even When a Pupil's Own Disciplinary Infractions and Past Achievement Are Taken into Consideration?

From the study's analysis it emerges that about 80 percent of the differences in achievement depend on the pupil's personal characteristics. Only 10 percent of the differences in achievement are related to the school attributes, and another 10 percent to the specific class attributes.

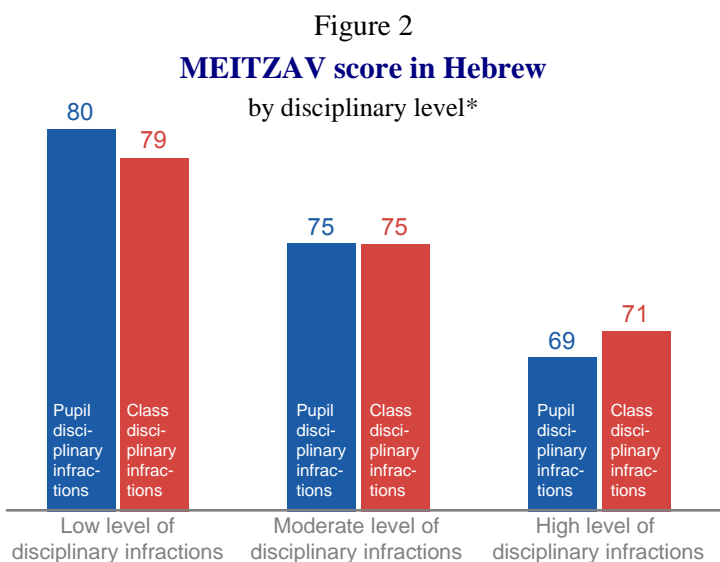
In this part of the study, the effect of characteristics at three levels – the pupil, the class, and the school – on the pupil's MEITZAV score in Hebrew were examined. At the pupil level, the findings correspond with what is already well-known: girls' achievements are higher on average than those of boys, and a pupil's achievements improve the more educated the parents are and the higher the pupil's past achievement. At the school level, only school size was found to have a significant negative effect on pupil achievement. The effect of school size is entirely explained by the degree of disciplinary enforcement: the negative effect of large schools stems from a lesser degree of control and supervision over disciplinary infractions and violence.

The study's central finding is that disciplinary infractions in a class have a significant negative effect on pupil achievement, even when past achievement is controlled for. In other words, the achievements of pupils in a class rife with disciplinary infractions are lower than those of pupils in well-behaved classes, regardless of the pupil's personal behavior or past achievement level. As opposed to the disciplinary infractions in a class, class size – as also the percentage of girls and average parental education in a class – has no significant effect on pupil achievement. Class size is not the factor that affects pupil achievement but the opposite: pupils with high achievements are placed in larger classes relative to pupils with low achievements.^{4,5}

⁴ Nonetheless, it should be kept in mind that the optimal way of handling the selective placement of pupils in classes with different characteristics is by using an experimental model, and therefore the study's findings do not provide unequivocal proof that class size or composition is not relevant to a pupil's achievements.

⁵ Neither did the teachers' treatment of pupils in a class have an effect on pupil achievement. Interestingly, while the teachers' behavior at the class level had no effect on pupil achievement, a pupil's subjective perception of the teachers' behavior did have an effect. That is, the less fair a pupil perceives the teachers' behavior to be, the lower pupil achievement tends to be. It is, however, difficult to determine whether a negative attitude on the part of the teacher leads to a drop in a pupil's achievements, or whether pupils with low achievements perceive the teachers' behavior in class as less fair.

In addition to disciplinary infractions in classes, the achievement of pupils with numerous disciplinary infractions are lower than those of pupils who behave well; on the other hand, there are no differences in achievement between pupils in schools with varying levels of discipline, or with different enforcement policies. Figure 2 shows that MEITZAV scores are negatively related to disciplinary infractions of pupils and at the level of classes. The figure shows that the effects of disciplinary infractions at the pupil level and at the class level are rather similar. The difference in achievement between an especially well-behaved pupil (two standard deviations below the average disciplinary problems) and an extremely undisciplined pupil (two standard deviations above the average) comes to 11 points (a grade of 80.4 versus 69.4 on average). The difference in achievement between a pupil who studies in an especially disciplined class and one in an extremely undisciplined class comes to 8.4 points (79.1 versus 70.7, respectively).



* Differences in disciplinary infractions were measured in terms of standard deviations, starting from two standard deviations below the average (of the pupil or in the class) up to two standard deviations above the average.

Source: Yossi Shavit and Carmel Blank, Taub Center

Data: RAMA (authors' calculations)

4. Summary and Conclusions

The topic of discipline in schools has drawn considerable attention from both academics and the general public. Policy makers in Israel and around the world are searching for ways to improve the disciplinary climate in schools and reduce the number of disciplinary infractions and violent incidents in order to facilitate a better learning environment and improve pupil achievement. Studies have found correlations between pupil characteristics and school characteristics on the one hand, and disciplinary infractions and achievement, on the other hand. Only a handful of studies have focused on the class as the unit of analysis, even though a pupil spends the bulk of the learning time in the classroom. The present study offers an analysis that takes into account the pupil level and the school level, but focuses on the class level to examine both the characteristics that affect disciplinary infractions in a class as well as their contribution to pupil achievement.

This study presented three central research questions. The first was whether there are differences in the level of disciplinary infractions between different classes in the same school, and the answer was found to be affirmative. About two-thirds of the difference in disciplinary infractions between classes is related to class characteristics – such as its size or perceived teacher fairness – and not to school attributes. It, therefore, seems that examining only the school attributes is not enough to explain the level of discipline in the classroom.

With regard to the second research question – which class and school characteristics explain the level of disciplinary infractions in a class – it seems that lower level of disciplinary infractions in a school and fair treatment by class teachers, as well as a strict enforcement policy at the school level can improve the class discipline. Likewise, in classes whose pupils come from a stronger socioeconomic background, there are fewer disciplinary problems.

In answer to the third research question, it seems that disciplinary infractions in the class harm pupil achievement, even when a pupil's personal disciplinary infractions and past achievement, as well as disciplinary infractions in the school, are taken into account.

It is important to note that of all the class and school attributes that were examined, only disciplinary infractions in the class were found to have a statistically significant effect on pupil achievement. It would appear that ignoring the class level, as most research has done, makes it difficult to understand the complex relations among institutional attributes of the school, class attributes, disciplinary infractions, and pupil achievement.

It seems, then, that the policy makers' assertions that it is difficult to study in a class that has disciplinary infractions is correct. A high level of disciplinary infractions harms pupil achievement, regardless of the pupil's personal behavior. The expected disparity in achievement between a pupil in a well-behaved class and one in a poorly-behaved class is approximately ten points – almost the same as the disparity between a pupil who is frequently absent from school and late to class and one who is not. It is also important to bear in mind that disciplinary infractions in the class not only affect achievement; they are liable to affect also the overall learning process, the emotional welfare of a pupil, and pupil relations with the teachers. These variables were not examined in this study, but it would be worthwhile to consider them in future studies focusing on the class level.

A central finding of this study, which may help policy makers in improving the disciplinary climate in classes, is that the disciplinary enforcement policy at a school, as well as the teachers' treatment of pupils, can affect the level of disciplinary infractions in the class. Accordingly, providing training and tools to help teachers and schools deal with disciplinary problems and enforce the rules of conduct fairly can contribute to a more positive disciplinary climate, and thus contribute also to improving pupil achievement.

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