**Can A School Principal’s Leadership Style Improve Performance in Schools Specialized in Conduct Disorders?**

**Purpose**

The objective of this paper is to examine the relationship between the improvement in student performance and the school principal’s leadership style. The research population consists of students with special education needs (SEN) enrolled in public schools specialized in conduct disorders.

**Methodology**

Datasets on students’ performance, students’ background characteristics, teacher profiles, and school features were collected. In addition, a questionnaire on teachers’ perceptions of the school principal’s leadership style was distributed.

Regression analyses were executed to examine the relationships between the improvement in academic performance of students with SEN, and leadership style, while controlling for student background characteristics, teacher profiles, and school features.

**Findings**

Using a multilevel mixed-effectsmodel we found that the more the school principal is perceived as a transformational leader, the higher the students’ academic performance. Additionally, advantaged students (high level of previous achievement, high SES) enrolled in secondary school and taught by more educated teachers exhibit higher performance compared with their counterparts.

As the findings of this research point out, transformational leaders are perceived as encouraging greater improvement in the academic performance of students with SEN. Policy implications might suggest that preparation programs should focus on developing a school leader who is characterized as transformational. Additionally, policymakers might wish to incentivize the assignment of principals who are characterized as transformational leaders to schools specialized in conduct disorders.

**Originality/value**

The contribution of this research is twofold. First, the study focuses on improvement in academic performance rather than the level of performance. Second, it focuses on the performance of students with SEN who have been diagnosed with conduct disorders, a population that is not commonly studied.

**Keywords**: Leadership Style, Performance, Special Education, Conduct Disorders, Improvement.

# Introduction

An important goal of education is to encourage learning, development, and improvement among students. In the contemporary era of globalization, most national and international assessments and comparisons focus on measurable student performance. The demand for accountability increases expectations that educators and school principals will enhance student learning and improve their performance (Törnsén & Ärlestig, 2014).

In line with this international trend, the Israeli education system strives to encourage learning, development, and improvement. Yet, the multifaceted diversity of the Israeli student body makes achieving the desired improvement even more challenging (Harkabi & Mendel-Levy, 2014). Classrooms are populated by students with diverse background characteristics (e.g., ethnicity, sociocultural groups, socioeconomic status, and family background). This diversity is also evident in the large number of categories of students with special education needs (SEN). One such category is that of students with conduct disorders (CD), the population under examination in this research.

The purpose of special education schools is to develop learning among the students with special education needs. In particular, conduct disorder schools are designed to decrease the chances for outbursts of behavioral disorders and to alleviate the intensity of such outbursts when they do occur. Schools vary in their ability to promote improvement in student performance in accordance with the principal’s leadership style. The ability to promote improvement in student performance may also be related to the background characteristics of the students as well as the attributes of their teachers and the schools.

This research examines the relationships between leadership style and performance improvement among students with conduct disorders attending special education schools.

The structure of this paper is as follows. The following background subsection reviews the relevant literature (subsection 1.1), and then the research questions and hypotheses (subsection 1.2) are presented. The method is described in section 2 and the findings are presented in section 3. Section 4 discusses the findings and suggests some policy implications.

## Background

This subsection is comprised of three issues. First, the literature on conduct disorders is reviewed to provide background on the research population. Second, the literature on leadership styles with an emphasis on its relationship with improved student academic performance, especially for students with conduct disorders, is reviewed. Third, improvement in academic performance is reviewed.

### Students with conduct disorders

Among students with SEN, those with conduct disorders exhibit a repetitive and persistent pattern of behavior marked by violation of the basic rights of others or of major age-appropriate societal norms or rules, as manifested by the presence of the following behaviors for a period of at least twelve months: aggression toward people and animals, destruction of property, deceitfulness or theft, serious violations of rules. This behavioral disturbance causes clinically significant impairment of social, academic, or occupational functioning (American Psychiatric Association, DSM-5, 2013).

Conduct disorder is also specified by limited prosocial emotions. To qualify for this specifier, an individual must have persistently displayed at least two of the following characteristics: lack of remorse or guilt, callousness and lack of empathy, lack of concern about performance, shallow or deficient affect (for a further review of conduct disorders, see DSM-5, section 2, 2013). These characteristics must reflect the individual’s typical pattern of interpersonal and emotional functioning over a twelve-month period and not just occasional occurrences in some situations. Thus, multiple information sources are necessary to assess the criteria for this specifier, including self-reports as well as reports by others who have known the individual for extended periods of time (e.g., parents, teachers, coworkers, extended family members, peers).

Longitudinal studies show that conduct disorders negatively affect many aspects of life, including school participation, social life, relationships with parents, and self-perception. Moreover, the child’s mental state and current and future environment can be affected, leading to substance abuse, violence, and delinquency (Breyer at el., 2014).

In the educational setting, conduct disorders are associated with regular absence, disciplinary problems, violence, abuse and exploitation of others, and school dropout. The DSM-5 (2013) Psychological Diagnostic Guide to Disorder Defiance Oppositional Disorder divides clinical occurrences into two categories: (1) those marked by defiance, refusal to accept authority, and resistance to authority, and (2) the more severe category of behavior disorder marked by increasing aggression and a high probability of conflicts with the law.

Individuals with behavioral disorders constitute some 5 to 15 percent of the overall population. In Israel, the number of students with conduct disorders (CD) enrolled in preprimary and in secondary education doubled over the past five years (Bukobza, 2012). Specifically, in 2017, students with conduct disorders constituted 18,302 students of the overall student body: 1,188, 8,889, and 8,225, in preprimary, primary, and secondary school, respectively (Weisblei, 2015). In comparison, in 2012, the share of children with CD of the overall population was much lower: 649, 9,081, and 3,276 children were enrolled in preprimary, primary, and secondary education (Bukobza, 2012).

Leadership styles

The state-of-the-art paradigm within the leadership literature is the theory of transformational/transactional leadership proposed by Burns (1978) and further developed by Bass and Avolio (2000). Over the last two decades, Avolio and Bass (2004) developed and validated the Multifactor Leadership Questionnaire (MLQ), which is now the standard instrument for assessing a range of transformational, transactional, and nonleadership scales. The effectiveness of transformational leadership has been proven in a number of settings and in many countries worldwide (Judge & Piccolo, 2004).

### Leadership style and student performance

School effectiveness is strongly related to the leadership of the principal (Hoy & Smith, 2007). This reflects the need for leaders to recognize their leadership style and to understand its major importance to the overall effectiveness of their school.

Leadership is a concept that has been widely studied and researched across a variety of domains, including both business and education) Hoy & Smith, 2007). According to Savas and Toprak (2014), “Leadership is known as an effort that directs organizational activities to achieve a common goal.” In view of the ever-changing educational landscape, principals might incorporate a wide range of leadership skills and styles to direct their school organization toward common goals and a well-directed vision )Savas & Toprak, 2014).

This paper considers three leadership styles. The first, transformational leadership, is defined as a leadership approach that brings about change in individuals and social systems. In its ideal form, transformational leadership generates valuable and positive change in its followers, with the end goal of transforming followers into leaders. When properly enacted, transformational leadership enhances the motivation, morale, and performance of followers through a variety of mechanisms, among them connecting the follower’s sense of identity and self to the organization’s mission and collective identity; serving as an inspiring role model for followers; challenging followers to assume greater ownership of their work; and understanding the strengths and weaknesses of followers so the leader can align followers with tasks that optimize their performance (Nsubuga, 2008).

The second type of leadership is transactional leadership, which focuses on results, conforms to the existing organizational structure, and measures success according to the system of rewards and penalties of the organization. Transactional leaders have formal authority and positions of responsibility in an organization. This type of leader is responsible for maintaining routine by managing individual performance and facilitating group performance. Leaders of this type set the criteria for their employees according to previously defined requirements. Performance reviews are the most common way to judge employee performance. Transactional, or managerial, leaders work best with employees who know their jobs and are motivated by the reward-penalty system. The status quo of an organization is maintained through transactional leadership (Nsubuga, 2008; Geyer & Steyer, 1998; Leithwood & Jantzi, 2005; Leithwood, Seashore Louis, Anderson, & Wahlstrom, 2004).

The third leadership style is defined as nonleadership, also known as laissez-faire leadership. Laissez-faire leadership involves the avoidance or absence of leadership. Leaders who score high on laissez-faire leadership avoid making decisions, hesitate in taking action, and are absent when needed. Although laissez-faire leadership bears some resemblance to leadership by exception or passive leadership, researchers have argued that because laissez-faire leadership represents the absence of any leadership (transformational or transactional), it should be treated separately from the other transactional dimensions (Avolio, 1999; Bass, 1998). Accordingly, we treat laissez-faire leadership as separate from transformational and transactional leadership (while also reporting on the relationships between laissez-faire leadership and these other leadership dimensions) (Nsubuga, 2008; Bass & Avolio, 1993; Avolio & Bass, 2005).

Furthermore, the literature emphasizes the importance of school principal leadership style to improved learning outcomes (Kambambovu, 2018; Atenio, 2013; Rautiola, 2009; Printy & Marks, 2006). Printy and Marks (2006) found that principals hold themselves accountable for providing the direction and resources to support their work and set high expectations of teaching, learning, and student performance.

School leaders play a vital role in managing student behavior through the development of policies, procedures, rules, and regulations. School principals are also expected to initiate and maintain a safe, collegial, and caring environment in the schools. Kinsler (2013) maintains that school leaders play the important role of formulating and implementing policies, procedures, and strategies for managing student behavior. Hence, the overall responsibility for student behavior lies heavily on the shoulders of school leaders. As the captains of the ship, school leaders are responsible for making sure that systems are in place to prevent disruptive behavior, ensure smooth functioning, and attain the school’s objectives. School leaders play a central role in directing school progress and ensuring pupils’ safety and well-being, and they expect their teaching colleagues to do the same. In this regard, Chaplain (2003) states that “heads are perceived as being responsible for providing leadership; strategic planning . . . plus overall responsibility for student behavior” (p. 103). Similarly, the school climate, and particularly the cultivation of trust, is a key responsibility of the school leadership (Nooruddin & Baig, 2014).

### Improvement in academic performance

Academic performance is commonly measured by using status models, indicating the extent to which an individual has met specific goals that were the focus of activities in instructional environments, specifically in school, college, and university. Recently, this type of measurement has been exemplified by international tests, among them PISA (Program for International Student Assessment). In these status models the academic performance measures assess outcomes at a specific point in time.

However, academic improvement evaluates longitudinal outcomes over a period, while taking several variables into consideration. It might be measured using value added or growth models. The purpose of the “value added” model is to measure changes in student grades from year to year and to examine the factors influencing the size of these changes. This model is based on the claim that genuine excellence stems from the school’s ability to exert a positive influence on its students, to enrich their intellectual development, and to bring about a positive change in their lives.

There is a strong positive relationship between conduct disorder and academic underachievement in the literature (Barriga et al., 2002; Pardini & Fite, 2011; Kremer et al., 2017). Academic problems are generally believed to be related to attention deficits, negative teacher-student relationship, regular absence from school, and an overall lack of commitment to rules and conventions. Some evidence also indicates that the frustration and alienation that children with these disorders experience in the school environment may actually result from academic underachievement. Whatever the case, a child with oppositional defiant disorder (ODD) or conduct disorder (CD) is often significantly disadvantaged in terms of achieving academic success (DSM 5, 2013).

Academic achievement and socioeconomic strata

Students from disadvantaged socioeconomic backgrounds perform at lower levels in their academics compared to students from more privileged families (Benkovitz, 2008a). Examinations of the relationship between socioeconomic background and academic achievement found that in schools where low socioeconomic cross-section populations study, the level of achievement was lower than in identical schools that are populated with a higher-class population (Dagan, 2002). An article by Berliner (2006) that investigated the place of poverty in school reforms shows that there is a link between poverty and low educational attainment, especially among urban minorities, status low socioeconomic factors that do not allow environmental factors (family, environment - and non-genetics) will limit the student’s existing talent. In general, a small improvement in the family’s poverty conditions leads to improvements in positive behavior at school and higher achievement.

The current study examines improvements in academic performance among students diagnosed with conduct disorders. The aim is to assist policymakers in providing relevant assistance and making the necessary adjustments to the education system, in preparing school principals whose leadership style is suitable for working with a population of students diagnosed with conduct disorders, and in creating an optimal educational climate, with an emphasis on achieving improved performance in mathematics among this population.

## Research Question and Hypotheses

This research examines the following question:

To what extent, if at all, is the principal’s leadership style related to academic performance among the examined population, after statistically controlling for previous student performance, students’ background characteristics, teacher profiles, and school features?

Based on the research question, the hypothesis is as follows:

Integrated and collaborative transformational school principal leadership styles will exhibit positive relationships with improved academic performance among students with conduct disorders, while statistically controlling for previous student performance, students’ background characteristics, teacher profiles, and school features.

# Methods

## Questionnaire

The questionnaire on leadership style was comprised of 37 of the total 64 items in the original leadership questionnaire developed by Bass and Avolio (1991) and was designed to assess teachers’ perceptions regarding the leadership style of their school principal. The Hebrew version of this questionnaire was developed by Popper (1994). In the current study three main leadership styles were reviewed: transformative leadership, transactional leadership, and nonleadership.

A preliminary study was conducted among ten teachers from different schools to examine the structural validity of the 37 selected items. Twenty-one of the 37 items were found to be relevant to perceptions of the school principal as transformative (e.g., “indicates the importance of having a strong sense of purpose”). Ten of the 37 items were found to be relevant to perceptions of the principal as transactional (e.g., “talking to us about the values and beliefs that are most important to him/her”). Six of the 37 items were found to deal with perceptions of the principal as a nonleader (e.g., “The principal is not there when I need him/her”). Scales for questionnaire items phrased in the negative were reversed (e.g., “avoids interfering when important issues arise”).

Table 1 presents the descriptive statistics (means, standard deviations, and range) and the reliability (Cronbach’s alpha values) for all items in the leadership styles questionnaire and for each factor separately.

--Insert Table 1 here--

After the scales were reversed, the Cronbach alpha reliability level was found to be very high (α = 0.94).

**Confirmatory Factor Analysis**

To validate the questionnaire, a confirmatory factor analysis (CFA) was performed using R software. Confirmatory factor analysis gives further strength to the structure’s validity by enabling us to quantitatively assess the quality of the dimensions of the proposed structure (Hinkin, 1998). The CFA analysis finds three main factors. The first, transformational leadership, is comprised of items 2, 14, 19, 25, 27, 34, and 36. The second, transactional leadership, is comprised of items 1, 10, 15, and 35. And the third factor, nonleadership, is comprised of items, 3, 4, 6, and 24. Model fit indices indicated a valid model, χ² (87) = 107.28, p> 0.05, CFI = 0.967, TLI = 0.960, RMSEA = 0.050, and SRMR = 0.050.

--Insert Table 2 here--

Three models were measured using STATA software. First, we measured Model I, a simple multivariate regression model (OLS). Since the datasets in this work are clustered (e.g., students are learning in different schools), we also measured Model II, which is a hierarchical regression model (HLM). Finally, since students are clustered in classes and classes clustered in schools, we measured Model III, which is a mixed effect model (LMM).

The explained variable is student achievement (i.e., students’ achievement in the second period – -end of the school year). The explanatory variables are school principal leadership styles (transformational, transactional, and non-leader). Previous student achievement (i.e., students’ achievement in the first period – middle of the school year), student characteristics (i.e., immigrant, and SES), teacher profiles (i.e., education and gender) and school features (i.e., school level: primary/secondary) are statistically controlled.

In this research the data is clustered in different schools, so we also measured a hierarchical model. Hierarchical linear modeling (HLM) is a complex form of ordinary least squares (OLS) regression that is used to analyze variance in the outcome variables when the predictor variables are at varying hierarchical levels; for example, students in a classroom share variance according to their common teacher and common classroom. This development allowed for widespread application of HLM to multilevel data analysis (for development of the algorithm see Dempster, Laird, & Rubin, 1977; for its application to HLM see Dempster, Rubin, & Tsutakawa, 1981). Following this advancement in statistical theory, HLM’s popularity flourished (Raudenbush & Bryk, 2002; Lindley & Smith, 1972; Smith, 1973).

This research also measured a mixed model allowing for fixed and random effects of the different levels. Linear mixed-effects models (LMMs) comprise two types of terms: “fixed-effects” and “random-effects,” hence the title “mixed-effects.” The fixed-effects terms comprise exclusively fixed factors, and the fixed-effect part of an LMM can vary in complexity depending on which terms are included. The “full” LMM includes the highest-order interaction between the fixed factors, as well as lower-order interaction terms and main effects, whereas other LMMs would include only some of these terms. The random-effects terms of LMMs are all the terms that include random factors; interactions between fixed and random factors are considered in the random-effects terms (Magezi, 2015).

## Sample

Data were collected from 77 teachers who worked in SEN public schools specialized in CD.

Table 3 presents the distribution of student characteristics, teacher profiles, and school features.

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The examined population included fourth to twelfth graders diagnosed with conduct disorders and enrolled in schools specializing in working with such students. These students had begun their studies in regular schools. After their diagnosis, a national placement committee placed them in the examined schools to assist them in dealing with their disability and to develop their learning. Furthermore, this study analyzed the population of teachers at these schools as well as the type of school attended.

## Procedure

The questionnaire was distributed among the participants in two ways. In some cases, printed questionnaires were distributed to a contact person at the school, who distributed the questionnaires in the classes and collected them. In other cases, we went to the school in person. Each class in turn came to us in the computer lab, where we distributed the questionnaires to the students online. We used school staff members to mediate and help students with any difficulties they encountered. Afterward, the homeroom teacher of each class provided background characteristics and grades in mathematics (beginning of year and middle of year) for each student. In most cases, we received full cooperation from the students and staff, so there was no need to disqualify questionnaires that were not properly filled out. Statistical analyses of the question and hypothesis in the present study were conducted using SPSS (version 23).

The six datasets in this research were collected from five schools in Israel specializing in CD. The datasets comprise the longitudinal mathematics performance achievement of students with CD. Performance data include achievement from the beginning of the year (assessments by the classroom teachers) and the middle of the year (midterm grades). Another file included the students’ background characteristics (migration and SES).

Other datasets were collected on teacher profiles (gender and education) and their perceptions regarding the school principal’s leadership style (transformational, transactional, and nonleader). Finally, data on school features (primary or secondary school) were collected.

## Variables

This research uses three types of variables. The first type includes dependent variables that represent improvement in the mathematics performance of fourth to twelfth graders attending SEN schools specializing in conduct disorders. The data for the dependent variables were collected at two points in time: teachers’ assessments of their students’ knowledge in mathematics at the beginning of the year and students’ midyear grade in mathematics on their report cards. The second type includes the intermediate variables of leadership style as evaluated by teachers and students. The third type includes independent variable information gathered from each research participant as follows: student characteristics (SES, migration, and class level), teacher profiles (gender, education), and school features (primary or secondary school).

## Analysis method

The research uses three regression models to explain the gain in student achievement over time by school principals’ leadership style controlling for student background characteristics, teacher profiles, and school features.

Figure 1 presents the analyzed relationships.

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Model I estimates these relationships using a multivariate linear regression: OLS (table 4, column 1). Model II measures these relationships using a hierarchical regression in which students are clustered in schools (table 4, column 2). The third model, Model III, measures these relationships using the mixed model in which students are clustered in classes and classes are clustered in schools (table 4, column 3).

--Insert Table 4 here--

# Results

This section outlines the findings of the three models discussed above. Table 4 presents the findings of Model I, Model II, and Model III, and each explains variation in achievement by school principal leadership style controlling for previous student achievement, student background characteristics, teacher profiles, and school features.

The findings of Model I are presented in table 4, column 1. Using OLS regression reveals that school principal leadership style is not statistically significant in explaining the variation in student achievement. However, previous achievement is statistically significant in explaining the variations in student achievement (β =0.714\*\*\*, table 4, column 1). In addition, primary students who reside in high SES municipalities exhibit a higher level of achievement compared with their counterparts (β =1.324\*\*, table 4, column 1). Immigrant students exhibit a higher level of achievement compared with their counterparts (β =6.665\*\*, table 4, column 1).

Using a hierarchical model in which students are clustered in a school, the regression analysis revels that school principal leadership style was found statistically significant in explaining the variations in student achievement. Specifically, transformational leadership is related to a higher level of student achievement (β =4.106\*\*, table 4, column 2). In addition, previous achievement was found to be statistically significant in explaining the variations in student achievement (β =0.714\*\*\*, table 4, column 2). Moreover, primary students residing in high SES municipalities exhibit a higher level of improvement in achievement (β =1.324\*\*, table 4, column 2). Additionally, immigrant students exhibit a higher level of improvement in achievement compared with their counterparts (β =6.665\*\*, table 4, column 2).

Finally, the results of the mixed model reveal that school principal leadership style was statistically significant in explaining the variations in student performance (β =4.106\*\*, table 4, column 3). Specifically, transformational leaders correlate to higher level of student performance. In addition, previous performance was found to be statistically significant in explaining the variations in student achievement (β =0.714\*\*\*, table 4, column 3). Moreover, students residing in high SES municipalities exhibited better performance (β =1.324\*\*, table 4, column 3). In addition, highly educated teachers correlated to high student achievement (β =3.372\*\*\*, table 4, column 3). Furthermore, secondary students’ performance was higher compared with primary students’ performance. (β =-8.906\*\*\*, table 4, column 3).

# Discussion

This section discusses the findings of the three models revealed above. Which variables have relationships with student achievement, and what is the reason for those relationships?

Transformational leadership is defined as a person’s ability to engage others for the purpose of building motivation. Given that transformational leaders generally have staff members who are committed to a shared goal or vision and are more satisfied in their positions, this type of leadership has the potential to greatly impact the organizational climate of a campus (Bass & Riggio, 2006).

A key finding of this research is that a school principal’s leadership style is related to student performance. Specifically, a school principal who is perceived as a transformational leader contributes to student performance. This finding is evident when accounting for the cluster nature of our datasets (i.e., Model II and in Model III). However, using a simple OLS regression model (Model I), this relationship was not found to be statistically significant. This finding is in line with the literature examining relationships between leadership style and performance. Transformational leadership style has been advocated for success in the school improvement process (Allen et al., 2015; Sun & Leithwood, 2012).

The second major finding of this research relates to previous achievement. Our finding reveals a positive and statistically significant relationship between previous student performance and current performance. This finding is robust in all three models examined. This finding is in line with the literature. Studies reveals that the variance among student performance is mostly explained by their past performance (BenDavid-Hadar, 2018).

Third, among student background characteristics, socioeconomic status (SES) is positively related to performance. This relationship is statistically significant in all the examined models. This finding is in line with the literature. Specifically, on average students residing in lower socioeconomic areas exhibit lower performance than do students who live in higher socioeconomic areas (State Controller’s Report, 2014).

Furthermore, the findings reveal that immigrant students exhibit higher performance in all three models. This finding is in line with the literature (OECD, 2015). Immigrant students tend to perform better on PISA in countries with highly selective immigration policies. But while the knowledge and education students had acquired before migrating have a profound impact on student achievement, the performance of immigrant students is even more strongly correlated to the characteristics of the school systems in their host country (Schleicher, 2015). When examining trends in performance differences between immigrant students and students without an immigrant background, it is important to consider them in the context of changes in the students’ socioeconomic profile. Education outcomes have improved in many countries of origin, and migration policies have become increasingly skill selective (Schleicher, 2015).

In Israel, there are several groups of foreign children without civil status; some were born in Israel and some came to Israel legally or illegally. Foreign children, whether they were born in Israel or came to Israel, experience many complex difficulties that affect their needs. The children and their parents suffer from immigration difficulties, as do many immigrants, including new immigrant children: unfamiliarity with the local language, cultural differences, social difficulties, and parents’ acclimation difficulties. The foreign population in the country is usually characterized by low socioeconomic status, and they suffer from job insecurity, lack of tenure at home, and insufficient supportive family and environmental anchors. Also, children who do not have a residence permit in Israel face uncertainty about their future and the future of their family, and know that they are at risk of deportation. In addition, children who crossed the border from Egypt are likely to have suffered many hardships along the way and have left their records, and some may have witnessed or been victims of severe violence, torture, and human trafficking phenomena (Moses, 2014).

Among teacher profiles, teacher education is positively correlated to student performance. Specifically, highly educated teachers (MA+) are related to higher levels of student performance. This finding is also statistically significant when addressing the cluster nature of the datasets (Model III). This finding is in line with the literature that finds teacher quality as key in improving student performance. Moreover, teacher characteristics, such as educational background, experience, certificate status, and leadership experience, are correlated to student performance (Darling-Hammond, 2000; Milanowski, 2004; Rockof, 2004; Dobbie, 2011; Rivkin, Hanushek, & Kain, 2005; Kane, Rockoff, & Staiger, 2008).

Fourth, there is school type. Our findings reveal a positive and statistically significant relationship between secondary schools and student performance. It was found that students with conduct disorders who attended secondary schools performed better than younger students with conduct disorders who attended primary schools. This is not in line with the literature: research shows that the transition to a new learning environment results in a decline in achievement, mainly as a result of the steep rise in the level of educational requirements and higher standards set by the division and secondary schools (Wampler, Munsch, & Adam, 2002), as these may have a negative impact on the student’s achievement (Silverthorn, DuBois, & Crombie, 2005).

## Conclusions and Implications

Based on the principle of equality in access to special education, children with special needs are equally likely to realize their abilities regardless of their social, cultural, or national affiliation. In Israel, ensuring equal opportunities in implementing the Special Education Law requires dealing with ongoing gaps and discrimination in allocating the budgets and services that provide the infrastructure for implementing the law. In a multicultural and multinational society, implementing this law requires that policymakers aspire to achieve equal educational and social opportunities for all students in the education system. This requires constant consideration and examination of the budgetary, organizational, and geographic barriers that impinge on equitable implementation of the Special Education Law, while remaining sensitive to the national, cultural, and linguistic diversity of the students (Margalit, 2000). Nevertheless, the results of the Meitzav tests published by RAMA (National Authority for Measurement and Evaluation in Education) (RAMA, 2013) illustrate the large performance gap between students from various socioeconomic levels in Israel, a gap that is one of the highest in the world.

As noted in the literature review, a prominent feature of the student population with conduct disorders is their weakened social background (American Psychiatric Association, 2013). Students from disadvantaged backgrounds are usually afforded a low degree of equal opportunity in education. The current study also examines the links between leadership styles and improvement in the mathematics achievements of these students, thus providing policymakers with suggestions for narrowing the existing gap.

The findings show that students with conduct disorders are positioned at a lower starting point compared with students in mainstream education with respect to their ability to achieve greater educational gains. This gap can be diminished by helping these students advance and improve their academic performance, thus overcoming barriers to higher education, which usually screens candidates based on matriculation grades. By doing so, a variety of positions in the Israeli economy will become available to these students. Such changes will result in developing and diversifying human capital, thus helping these individuals become self-fulfilled, integrated, contributing, and influential members of Israeli society.

Based on the results of the study, several potential implications for practice can be made. First, it is imperative to understand the contributions of leadership type as forecasters of learning outcomes since these are professional issues in education. Second, when hiring school leaders, professionals must make decisions on transformational, transactional, and laissez-faire styles as well as diversity of applicants. The results of this study suggest that the transactional leadership style positively and significantly correlates to learning outcomes. Thus, for low-performing schools, professionals may investigate any changes in leadership style and continuously train school leaders on best leadership styles to boost performance.

Furthermore, the implications of this research can help policymakers take note and adopt other methods to improve the academic performance of students in the special education population in general and among students with conduct disorders in particular. For instance, a lack of resources to pay for private lessons, the absence of a proper learning environment after school hours, and difficulties in adjusting to changes and stressful situations can hamper a student’s ability to achieve significant learning and properly absorb study materials. Students with SEN should be given accommodations in the form of extra hours in mathematics to enable them to realize their academic potential. Moreover, struggling students and students who do not have a supportive learning environment after school hours should be given access to private tutors. Finally, in light of these students’ emotional difficulties, assessing their learning verbally (while elaborating on their areas of strength and improvements) rather than quantitatively should be considered.

Inequality in education is manifested in many ways. Disadvantaged students are three times as likely to perform poorly on the PISA exams as are children from advantaged socioeconomic backgrounds (OECD, 2015). Students from advantaged families are more likely to come from home environments that are conducive to learning, including a quiet place to study and access to the internet. In addition, their parents are more likely to have the time and ability to help them with their homework and to encourage them to study. Students without these opportunities are thus at a disadvantage even before they enter school and continue to be at a disadvantage as they go through the education system (Burns, 2017). The results of this study can help policymakers in countries marked by social inequality reduce the gaps in mathematics performance.

Moreover, it was found that there is a significant and positive relationship between transformational leadership and improvement in students’ academic performance. Transformational leaders encourage their followers to innovate and try new things. They support the efforts of teachers to think outside the box (Healey, 2009). Leaders promote creative thinking and give their teachers fruitful opportunities to grow and change, which ultimately translate into increased student learning and achievement. Therefore, supervisors of the Department of Education should seek to appoint principals with backgrounds in conduct disorders and whose leadership style is in line with the transformational agenda. Menon (2014) hypothesized that transformational leadership will result in perceived effectiveness and satisfaction on the part of the followers. Transformational leadership is most likely to have a direct impact on organizational processes that are associated with employee practices, motivation, and satisfaction, which in turn are linked to the quality of service offered and the overall performance of the organization. Menon (2014) found that there is a significant link between job satisfaction and school leadership and that in situations of high overall job satisfaction, teachers are able to identify with transformational leadership in their principals.

## Limitations of the research

The current study has three limitations with respect to the study population. The first limitation is related to the students’ living conditions in that the degree of variation among students in this particular socioeconomic cluster is not high enough to examine the discrepancies based on living conditions. The second limitation is that schools do not provide an equal number of hours of remedial help in mathematics. While schools are required to allocate an equal number of hours to mathematics study, this number varies between primary and secondary school, as well in special education. A personalized curriculum would guarantee that students from the same class receive the same number of classroom hours of math, but those who have difficulty would receive individual hours of remedial help outside the classroom and even after graduation, resulting in a situation in which students from the same class study a different number of hours, with some receiving more individual instruction.

Finally, another limitation of the study is the fact that all data were collected using a questionnaire. Although the participants indicated their preferred choices on the questionnaires, they were unable to give explanations or express positions and opinions that might clarify their answers or provide more depth. Moreover, the teachers filled out a questionnaire about the leadership styles of their school principal, while the principals were not asked about their perceptions of their own leadership style or about their relationships with the teachers.

These limitations make it difficult for the researchers to generalize in making recommendations. Yet, as discussed in the Results section, various measures were taken to reduce the effect of these restrictions. Moreover, throughout the work, the researchers commented on the limitations before drawing conclusions, and the recommendations for follow-up studies include dimensions not included in this research paper.

## Suggested future research

To achieve more significant results or to exclude the intervening variables in this study, the number of participants and the number of schools should be increased. There are usually more boys than girls in most special education schools specializing in conduct disorders; it is estimated at 6 to 16 percent for boys and 2 to 9 percent for girls (Zahn-Waxler, Shirtcliff, & Marceau, 2008), so expanding the population of this research would serve to validate the gender variable as well. In addition, more male teachers should be examined. In Israel, the percentage of male teachers is significantly lower than the percentage of female teachers.

Moreover, the number of immigrant participants was significantly lower than the number of participants who were born in Israel. A lot of the immigrants were born in Israel while their parents were born abroad. Therefore, another possible research direction is to examine whether the parents’ country of origin constitutes a variable for examining improvement in mathematics achievement among students in general and students with conduct disorders in particular. Parental education is another potential variable that should be examined to see whether it is associated with encouraging students to learn and improve their academic performance. The study by Hans-Vaugen (2004) on parents’ influence on their children’s education reinforces the importance of adding this dimension.

School principals should also complete a leadership style questionnaire in which they assess their leadership style and their relationships with the teachers working under them. This questionnaire could be compared to the results of the questionnaires staff members completed on the principal’s leadership style and their relationships with the principal.

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