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The Effects of Management Style and School Climate on Mathematical Achievements in Special Education Schools Specializing in Conduct Disorders

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Abstract

Multiple studies were conducted on the topic of the correlation between students' demographic characteristics, teachers' profiles and different types of schools and their academic achievement, specifically in the mathematics. The current study also addressed this issue, however, unlike previous studies, it focused on a specific population in special education.

This study examined the correlations between the school climate and the management style of the principle and the level of improvement in the student's grades in mathematics, with the student's background characteristics (gender, city of residence and country of birth), the teachers' profiles (gender, age, seniority and education) and the characteristics of the school (elementary or middle school – high school), as covariate variables.

The study included three research questions: (a) to what extent, if any, there is a correlation between the student's background characteristics (gender, the student's country of origin and a socio-economic status), the teachers' profiles (gender, age, seniority and academic education), the characteristics of the school (elementary, high school) and the management style of the school principle and school climate? (b) to what extent, if any, there is a correlation between the characteristics of the student, the teachers' profiles, the characteristics of the school and the change in the distribution of the achievements in mathematics? (c) to what extent, if any, there is a correlation between the management style, the school climate and improvement in the distribution of achievements in mathematics among the examined population, while under statistical supervision of the background characteristics of the students, the teachers' profiles and the school characteristics?

The research methodology consisted of a quantitative analysis and 5 OLS regression models. Model 1 and model 2 analyze the correlations between the students' background characteristics, the teachers' profiles, the school characteristics and the climate and management style, respectively. In addition, correlations between the students' background characteristics, the teachers' profiles, the school characteristics and the degree of improvement in achievements, are analyzed in model 3. Finally, models 4 and 5 analyze the correlations between the school climate, the management

style of the school principle and the degree of improvement in achievements, respectively (under statistical supervision of the students' background characteristics, teachers' profiles and school characteristics).

The research tools consisted of two questionnaires: a **class climate** questionnaire (Walberg & Anderson, 1968) with 30 items, designated for the students. This questionnaire measured the feelings of students in their classroom and in school (for significance and reliability of the questionnaire – see appendix 1). Another questionnaire is a **management styles** questionnaire (Bass & Avolio, 1991), with 37 items, designated for the school staff, on the principle of the school of the educational institution in which the staff is employed. This questionnaire focused on the management strength of the school principle (for significance and reliability of the questionnaire – see appendix 2). In addition, the students' background characteristics were collected (gender, country of birth and city of residence, in accordance with classification of the social-economical measurement of the central statistical bureau), profiles of the education staff (gender, age, seniority and level of education) and the characteristics of the examined schools (elementary or high school).

The current study analyzed the data of 212 students of elementary and high schools specializing in working with students who have behavior conduct disorders, and 77 staff members who teach these students, sampled for the purpose of the current study. In the study participated 5 elementary and middle-high schools from the central district. The examined population included 4th-12th grade students, who were diagnosed and assigned to schools specializing in working with students who were diagnosed with behavior disorders. These students began their studies in regular schools and following their diagnosis and a decision of the placement committee, were assigned to the examined schools, in order to assist them in dealing with their disability and accompany them in the process of significant learning. Furthermore, this study analyzed the teachers' population accordingly as well as the type of school which they attend.

The findings regarding the teachers were as follows:

Part A: **there is a significant positive correlation between the economic-social ranking of the student's city of residence and class climate**. Thus, the higher the student's city of residence is ranked on the economic-social measure, the better the class

climate is ranked (see table 11: β = .84***). The other background characteristics of the students (gender and country of birth) were not found to be significant.

In addition, **there is a negative correlation between the teachers' age and the class climate**. The younger the staff member is, the higher the level of cooperation as well as the level and duration of class consolidation (see table 11: β = -.27*** - ו β = -.13*, respectively). On the other hand, **a positive correlation was found between the teacher's age and the degree of lack of the individual's leadership.** Thus, the older the staff member is, the higher the degree of the individual's lack of leadership. (See table 11: β = 1.03***). Moreover, **a positive correlation was found between the seniority of the teacher and the school climate**. Meaning, the more senior the staff member was, the higher the degree of cooperation in class (see table 11: β = .34***). Furthermore, **a negative correlation was found between the characteristics of the school (elementary or high school) and the class climate**. It was found that in elementary schools there is a more significant tendency for an optimal class climate. (See table 11: β = -.20***).

Part B: **there is a significant negative correlation between the student's city of residence and his perception of the school's principle.** Meaning, the lower the student's city of residence is ranked on the economic-social measure, the stronger and more influential he perceives the management strength and leadership of the principle in his school (see table 18: β = -.48***). In examining the rest of the student's background characteristics – gender and country of birth – no significant statistical correlation was found.

Furthermore, **a significant negative correlation was found between the teacher's education and the degree of the principle's involvement.** The less educated the staff member is, the more involved he perceives the school principle to be (see table 18: β = .25*) in the correlations between the school characteristics and the management style.

Moreover, **a significant negative correlation was found between the type of the school and the management strength of the school principle** (see table 18: β = -.42***). More specifically, **a significant negative correlation** (see table 18: β = -.56***) **was found between the type of the school and the perception of the principle as a leader of change**. Thus, there is a greater tendency to perceive the

principle as a leader of change in elementary schools, compared to high schools. In relation to the correlations between the students' background characteristics and an improvement in achievements, it was found that **there a significant negative correlation exists only between the student's city of residence and an improvement in achievements.** Meaning, the lower the city of residence is ranked on the economic-social measure, the greater the improvement in achievements (see table 18: β = -.42***). As such, students from a lower socio-economic status, improve their grades in mathematics more than their fellow students from a higher socio-economic status.

Part C: **a negative correlation was found between the ranking of the student's city of residence and the degree of improvement in achievements** (see table 23: β = -.31***). Additionally, **a negative correlation was found between the staff member's seniority and the degree of improvement in achievements** (see table 23: β =.35****).** Moreover, **a positive correlation was found between the type of the school and the degree of improvement in achievements** (see table 23: β =.51******). Hence**, the findings indicate that the <u>lower</u> the student's city of residence is ranked, the greater the degree of the gap in achievements. Furthermore, the less seniority the staff member possesses, the greater the degree of the gap in achievements.** Finally, **it was found that in high schools there is a greater tendency of a significant gap in achievements.**

In addition, of the three different management styles of school principals, **it was found that the more the school principle is perceived as a leader of change, the greater the degree of improvement of the students in their achievements in mathematics** (see table 24: β = .27*).

In part D: **a significant negative interaction was found between the class climate measure (general measure) and the degree of improvement of achievements. Meaning, the less optimal the class climate is, the greater the degree of improvement in achievements** (see table 21: *r* = -.37***).

On the contrary, in part E, **it was found that the greater the management power of the school principle is, the greater the degree of improvement in achievements** (see table 21: *r* = .24*****). In examining the differences between the three different management styles of school principals – change leading management, involved management and leadership management – **it was found that the degree of**

perceiving the principle as a leader of change among the staff members is significantly greater than perceiving the principle as involved. Furthermore, **no significant differences were found between the degree of perception of the principal as a leader and a leader of change or an involved principal.** Meaning, in the examined schools, the staff mostly perceived their principal as a leader of change. **It was further found that the less educated the staff member is, the more he perceives the principal as a leader of change**. This finding is derived from the fact that basic-educated staff members tend to perceive the principle (who possesses a Master's degree at the very least) as a leading character who changes the interface of the school.

Based on the findings of the study, it will be possible to improve and advance the achievements of students with behavior disorders, by changing and monitoring the most effective factors. It will also be possible to reduce the gaps between students in regular education and students in special education.

More specifically, the findings of the study indicate that in terms of the contribution of the students' background characteristics, the staff members and the school characteristics to predicting the degree of improvement in achievements, the higher the student's city of residence is ranked in the economic-social ranking according to the central statistical bureau, and the greater the seniority of the staff member, the greater the improvement in the gap between the students' grades in elementary school than in high school. As noted above, students from a higher socio-economic status are more successful in their studies, as a result of encouragement from their parents as well as a positive sense of climate they experience in class. In addition, a teacher with seniority possesses more significant tools in increasing the student's success, than a beginner. Regarding the type of the school, it was found that in elementary school the demands are more lenient and the school climate is more positive and optimal. Therefore, the degree of improvement in the achievements is greater.

In conclusion, it seems that **the economic-social ranking of the student's city of residence, the staff member's seniority and the type of the school** – were **found as significantly predicting the degree of improvement in achievements in mathematics as of the beginning of the school year** (according to a diagnosis

conducted by the homeroom teacher) **and until the mid-year grades** (given in the mid-year report card) **among the examined population.**

This study has both a theoretical and practical contribution. Theoretically, the contribution of the study is in clarifying the understanding of the student's emotional and social-economic environment as a basis for his ability to improve his achievements. For instance, a lack of means to pay for private lessons, an absence of a proper learning environment after school hours and difficulties in adjusting to changes and stressful situations that damper on the student's ability to maintain significant learning and properly assimilate the learned materials. In light of the above, practically, this study contributes to the level of implications on professional policy: granting extra reinforcement hours in mathematics, with the purpose of exhausting the student's potential in improvement his achievements and granting private lessons to struggling students and students who do not have a supportive learning environment after school hours. In addition, in light of the emotional difficulties of these students, assessing their grades verbally (while elaborating on their areas of strength and improvements) rather than numerically, should be taken into consideration.

In a different aspect that refers to the work of the school principals, it was found that **students of teachers with seniority improve their grades in mathematics more**. Accordingly, school principals should consider assigning senior teachers to instruct in classrooms with low grade percentage and thus achieve an improvement in achievements. Furthermore, in light of the finding according to which **the school climate in elementary schools is more positive and therefore the improvement in achievements is greater**, the following should be considered: deepening and increasing the social contents in classes, taking preventive measures as well as alerting of violence in schools and identifying dividing factors, should be taken into consideration. All of the above may lead to an improvement in the climate in high schools, and thus, to an improvement in grades.

A behavior disorder has a direct correlation with the student's coping in the school framework, starting from his adjustment abilities, perseverance in attending school, difficulty in complying to behavior regulations and his level of concentration and assimilation ability of the learned materials (American Psychiatric Association [APA], 2013; World Health Organization, 1992; Zoccollilo, 1992). Moreover, it was

found that **behavior disorder is more common among lower social-economic status** (APA, 1994).

In light of the above, it can be concluded that students with behavior disorder are situated at a lower starting point compared to students in regular education in the aspect of their abilities to reach greater educational achievements. The advancement of these students and improvement of their achievements may diminish this gap in a number of ways: overcoming academia blocks, which usually screen candidates based on matriculation grades, and as a result – integrating these students into a variety of positions in the Israeli economy. Such changes will result in the development and variation of the human capital as well as in turning a weakened and excluded population into one that can be self-fulfilled, integrated, and contribute and influence the Israeli society.