

**TAU Research Alliance in Education**  
**Schools and Matriculation Diploma:**  
**A Contextual Perspective of the Israeli Education System**

**Presented at the workshop**  
**Research-Practice Partnership for School Improvement: The Case of Achievements in**  
**Israeli High Schools**

**Report No. 2**  
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## **Objectives**

Schools are currently positioned in a pluralistic institutional environment, exposed to collaboration with multiple stakeholders and embedded in diverse cultural logics. This position, constitutes a major challenge for schools' legitimacy. One dominant factor granting legitimacy to schools, is its level of improvement and achievements. This study is part of the second stage of the project "TAU interdisciplinary centre for education reform". The first part, focused on changes over-time in the percentage of students eligible for a matriculation diploma, while addressing to schools' sectoral affiliation and socio-economic composition. This report continues exploring matriculation eligibility in Israeli high schools. It goes a step further by

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disclosing high-schools' pedagogic and socio-cultural factors and their relations to matriculation diploma's (Israeli Bagrut) eligibility at the school and students' level.

At the student level, matriculation eligibility is of great importance for achieving access to higher education and even for enrolling in prestigious and elite units in the army, which in Israel is compulsory. Hence, for students, success in obtaining a matriculation diploma carries significant implications for future social opportunities as it is an important and significant component of an individual's academic and occupational development. It is true that nowadays there may be numerous routes to integrate into higher education and gain entry into the labor market, but still, a high school diploma is an important factor for most students and especially for low socio-economic and other disadvantaged groups.

At the school level, being eligible for a matriculation diploma, is an arena for competition, accountability and legitimacy. Each year schools are ranked by the percentage of students who are eligible for a matriculation diploma. This issue, that, gains intensive public interest and is broadly discussed in the media. Schools that are highly ranked gain prestige and acknowledgment at the local and state level.

Despite the importance of a high school diploma, there are still social gaps between schools and students in the eligibility for this diploma. This study aims at disclosing the school factors associated with high schools' matriculation eligibility.

Accordingly, this study is guided by four questions:

- Q1.** Are schools improving in the rate of students who are eligible for a matriculation diploma?
- Q2.** What are the social (socio-economic status, sector and geographic area) and teaching force characteristics that are related to school improvement?
- Q3.** What are the schools' pedagogic and socio-cultural factors that are associated to school improvement?

**Q4.** What are the schools' pedagogic and socio-cultural factors that predicate students' probability to be eligible for a matriculation diploma? Are these factors differing by school improvement?

Answering these questions will enable the consideration of the domains of intervention in schools in order to enhance school improvement and lead students to be eligible for the matriculation diploma.

This document includes five parts. The first part, presents the theoretical assumptions regarding school improvement and enhancing students' achievements. The second part provides a summary of the central findings and conclusions of the first report as a base for the present report. The third part, addresses the four questions directing this report. In part four, several conclusions and future research and policy directions are presented. The last part presents the limitation of this study and suggestions for future development. This report also includes several Appendixes, providing detail about the data analyzed.

## **Part 1: A Brief Literature Summary**

Improving school achievements is a concern for researchers, educators, policy makers and diverse stakeholders across countries (Kovačević & Hallinger, 2019; Mourshed, Chijioke & Barber, 2011). This is true for Israel as well. International comparisons, based on the PISA 2015 indicated that in Israel there is an improvement in students' achievements, but yet these achievements are below the OECD's average<sup>2</sup>.

This places a great challenge for the Israeli secondary school system. In examining school systems, three dimensions need to be looked over: performance- refers mainly to schools' achievements and their improvement over time; interventions- refer to practices being employed to successfully improve school achievements. These practices address school leaders as well as teachers. The third dimension is the school context- the environment (e.g. structural, political, cultural, social, geographic), in which schools are situated that influences the emphasis and combination of interventions and practices employed in schools (Mourshed, Chijioke & Barber,

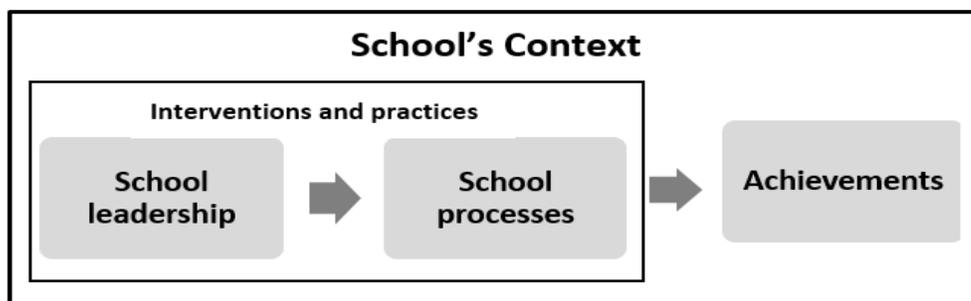
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<sup>2</sup>See, <https://www.oecd.org/israel/pisa-2015-israel.htm>

2011). That is, various practices can have different effects in different contexts (Stoll & Finc, 1999; Azkiyah, 2017). These three dimensions reflect the linkages between school effectiveness and improvement.

School effectiveness focuses on outcomes and pertains to the characteristics or factors that are empirically proven to be related to students' achievements (e.g. Creemers & Scheerens, 2000). School improvement emphasizes the practices that contribute to higher school achievements by revealing the factors that could be changed and modified through diverse interventions (e.g. teacher instruction, training) (Creemers & Reezigt, 2007). School improvement demands that educators adopt practices that can improve the school and lead to school achievements. These school factors and practices can be context dependent. Namely, what works well in a particular context, may be less effective in another context. There are diverse models that explain school effectiveness. These models (e.g. Bossert, 1982; Kovačević & Hallinger, 2019; Leithwood, Harris & Hopkins, 2008; Pashiardis & Brauckmann, 2018) share three common points, as presented in Figure 1: the focus is on schools as the unit of reference; 2. Researchers look for school factors that can make a difference and can be changeable. Within these factors, school leaders are the pivotal figures when it comes to improving schools; 3. School leaders have an indirect effect on students/schools' achievements through diverse educational processes, which are mainly transmitted and conducted by teachers (Leithwood, Sun, & Schumacker, 2019); 3. The linkage between school leaders, school processes and outcomes are context dependent (Hallinger, 2018) as presented in Figure 1.

**Figure 1: The Basic Model for School Achievements**



In the attempt to reveal the school leadership and school processes that contribute to school effectiveness, the literature (since the 80's) provides diverse sets of factors or related variables

(Reynolds et al., 2014). For example, Woods and Macfarlane (2017) in addressing “what makes a great school in the 21 century” in the UK, suggested nine pillars: shared vision and values, inspirational leadership, exceptional teaching, learning assessment and feedback to support high achievements; engaging and involving students in leading, managing and planning their learning; professional development; inclusive environment for learning, emphasizing mutual respect, trust and kindness; rich and creative curriculum meeting individual students and groups’ needs; high quality partnership with parents and the community; rigor self-evaluation and data analyses, reflection and collective peer review of the school.

A study by Preston, et al. (2017), presented a typology of these factors that is based on a comprehensive review that carries implications for high schools, which is the setting of the present study. In their review, Preston et al. (2017), indicated eight interconnected essential core factors that contribute to school effectiveness: (1) Learning-centered leadership, which refers to the extent to which leaders hold a vision in the school for learning and high expectations for all students. As Hopkins et al. (2014) indicated, at the dawn of the 21st century, there has been an increased focus on the need for a specific orientation toward student learning that is a key feature; and (2) rigorous and aligned curriculum, which focuses on the content that secondary schools provide in core academic subjects, including both the topics that students cover as well as the cognitive skills they must demonstrate during each course<sup>3</sup>.

These two components are the basis in which the other six core components can be implemented so as to bring positive outcomes for all students; These components are as follows: (1) Quality instruction, refers to the teaching strategies, assessment, scaffolding and assignments that teachers use to implement the curriculum, set high expectations for all students and help them reach higher academic standards. Teachers’ instruction or teaching quality was found to have a dominant influence on students’ outcomes compared to other factors (Hopkins et al., 2014; Azkiyah, 2017); (2) Systemic use of data, including multiple indicators of students’ learning and using data to inform classroom decisions. By having information and data regarding students’ learning, teachers can adjust their instruction to provide better learning opportunities (Azkiyah, 2017). For example, Janice Jackson, the CEO of Chicago Public Schools reported that the use of data, research and findings that drives practice, was in a very responsible way, a

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<sup>3</sup> In high-school in Israel, the core curriculum is defined by the Ministry of Education.

central factor in Chicago's schools success<sup>4</sup>; (3) Personalized learning connections, which addressed developing strong connections between students and adults, allow for teachers to provide more individual attention to their students and dialogue with each regarding unique circumstances and learning needs as well as developing students' sense of belonging. As the process of teaching is becoming more personalized (Rutledge & Cannata, 2016), instruction and learning are tailored to suit the needs of each individual. A more personalized learning setting is expected to ensure that students' education is designed to help them meet their potential and particular needs (Sarid, 2017); (4) A culture of learning and professional behavior, refers to the extent to which teachers take responsibility for events in their school and for their students' performance, and the degree to which they collaborate their efforts through such activities as school-wide professional development; (5) Systemic performance accountability holds schools to be responsible for improved students' learning at the state, district- and school-levels; (6) Connections to external communities grant opportunities of establishing meaningful links with parents and the community's organizations as well as local social services. Five of these components (1-4, 6) could be adjusted in this study (see Table 1, below) and examined in regard to high schools in Israel.

## **Part 2: Israeli High School Education**

The Israeli educational system encompasses about 1,190 high schools. About 36.7% are affiliated with the Jewish-secular education; 25.7% are Jewish-religious; 18.0% are Ultra-Orthodox schools<sup>5</sup> and 19.6% are affiliated with the Arab education<sup>6</sup>. The sectoral distinction is inherent within the education system, since the establishment of the state of Israel. Nowadays, this distinction cannot be ignored, as the four sectors continue to be segregated and differ in their resources and curriculum. In addition to the sectoral differentiation, the Israeli educational system is stratified according to socio-economic status (SES) and geographic areas, with a

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<sup>4</sup> <https://www.usnews.com/news/the-report/articles/2018-04-13/the-secret-to-chicago's-school-improvement>, Sep. 24

<sup>5</sup> In this report, we do not address the Ultra-Orthodox education due to lack of data.

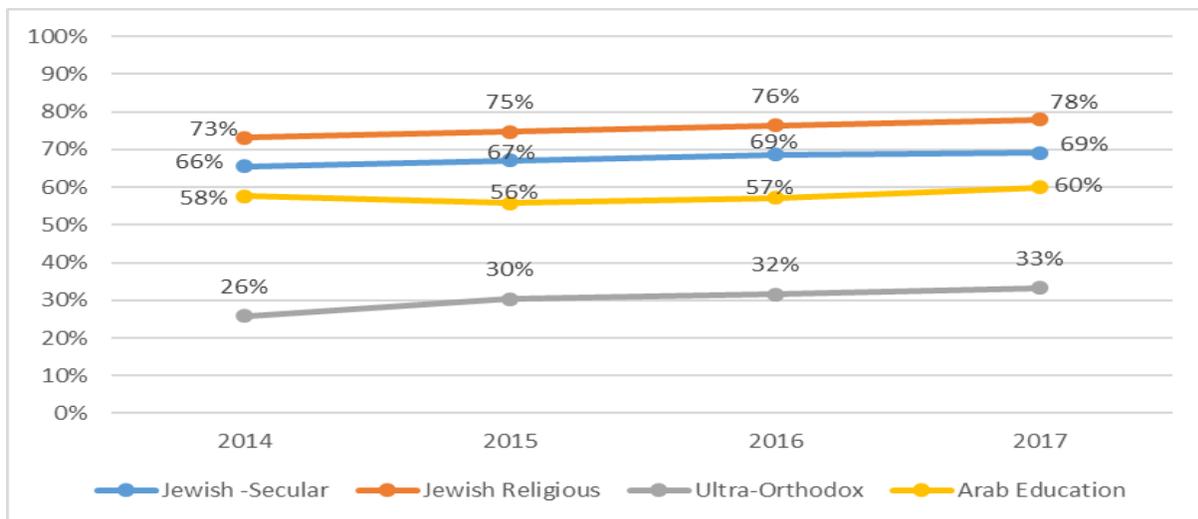
<sup>6</sup> Within each sector there is additional sub-systems, as within the Arab education, we can refer to Druze and Bedouin schools. At the present stage, since our main study is based on a school sample, we do not refer to these distinctions.

distinction between the ‘periphery’ (non-center districts) and the center, which is considered to be more affluent.

In general, there is a link between the sector, geographic area and schools’ SES. In this context, the Arab sector is found to be composed of a high percentage of low SES schools (63%) which are concentrated in non-center geographic locations. Most of the Arab schools are located in the North (53%) and to a lesser extent in Haifa or the South. Further, even in the Jewish education, non-center areas tend to be less affluent, with a relative high percentage of low/mid SES schools.

The different educational sectors differ in their achievements, although experiencing some changes over time, as presented in the following Figures.

*Figure 2: Average school percentage of students who were eligible for a matriculation diploma, by educational system between 2014-2017*

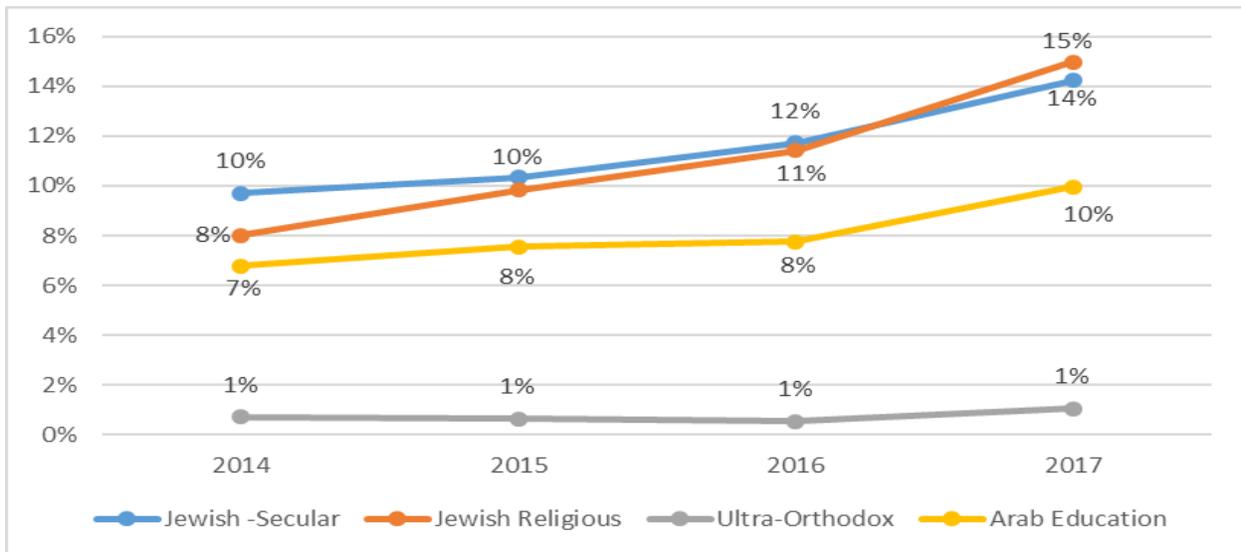


It emerged that there is a steady increase in the percentage of students eligible for a matriculation diploma. Further, there are differences between the educational sectors. With a high percentage of matriculation eligibility in the Jewish-religious education, followed by the Jewish-secular sector, the Arab education, and at the bottom, the Ultra-Orthodox education, as presented in Figure 2. However, once controlling for school characteristics, mainly SES, the common gap between Jewish and Arab schools is narrowing. This is partly due to the evolving middle and high socio-economic groups within the Arab society that change schools’ SES composition (Agbaria, 2016). This may lead to greater education equality in terms of Israeli Arab

students' enrollment in higher education and thus achieving a better life and a more positive future orientation.

Figure 3, focuses on matriculation with advanced math as reflected by five math units. Compared to humanistic school subjects, taking five math units is highly valuable as it is considered to be important for enrolling in higher education, for gaining better economic rewards in the labor market and for providing a certain advantage during the military service. Further, focusing on five math units is part of the 2015 policy implemented by Mr. N. Benet, the Minister of Education, for maintaining Israel's advantage in technology innovation and development ('start-up nation').

*Figure 3: Over-time differences in the average percentage of students who were tested for five math units in schools by educational system, between 2014-2017.*



From Figure 3, we can learn that there is a similarity between Jewish-secular and Jewish-religious schools in the percentage of students who were tested for five math units. In both educational systems, there is an increase over time, particularly for 2017. In the Arab sector, the average school percentage of students who were tested for five math units is lower, and its increase is less than in the Jewish schools. In the Ultra-Orthodox schools, students hardly take five math units.

Overall, the Jewish-secular schools, although they have an advantage in their SES composition and resources, Arab education and Jewish-religious education appears to be putting

more effort into improving their matriculation achievements. Currently, the Jewish religious education, surpasses its achievements compared to the Jewish secular education and the Arab education. The latter seems also to be improving in its achievements.

In addition, in each education system, high SES schools have a higher percentage of students who are eligible for a matriculation diploma or advanced math matriculation compared to low SES schools, except in the Ultra - Orthodox sector. Further, there was a considerable and a steeper increase in the percentage of students in schools who were tested for five math units in high SES schools in 2017. The findings, demonstrate persisting differences between sectors and schools' SES, highlighting the significance of these hard to change social factors (particularly school SES and sector). Hence, while examining the educational systems, we need to control these factor in order to find possible intervening and changeable factors that can be related to school effectiveness, as done hereby.

### **Part 3: Main Findings**

#### **Data Sources**

We based our research on both students and school data files for the years 2015-2017. The sample includes 1190 schools that in 2015 submitted their students to matriculation examinations. For these schools, eligibility for a matriculation diploma and several social characteristics were measured (e.g. educational sector, size, teachers' seniority and education, schools' socio-economic index-SES). In addition, changes in school achievements for 2015 and 2017 were analyzed.

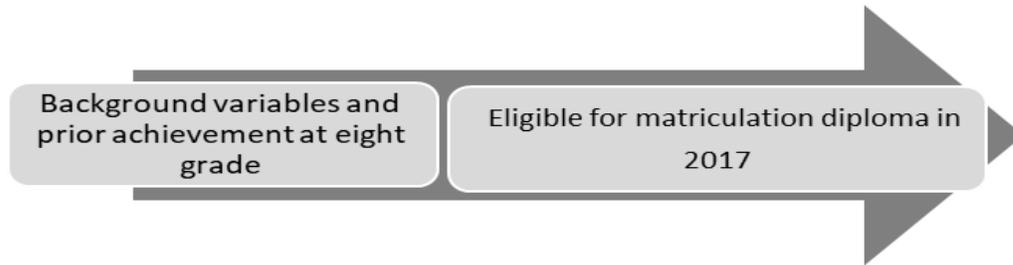
For a representative sample of schools, data related to pedagogic and socio-cultural factors, were collected for the years 2015-2016 (see below Table 1). These data are based on 490 schools, randomly selected, and on all their 12th grade students (n=48,539). In some analyses, which included students' prior achievements in grade eight, the number of students was lower (n=10,993).

Presented hereby the *time line* of the data for schools and students:

### For schools' variables



### For students' variables

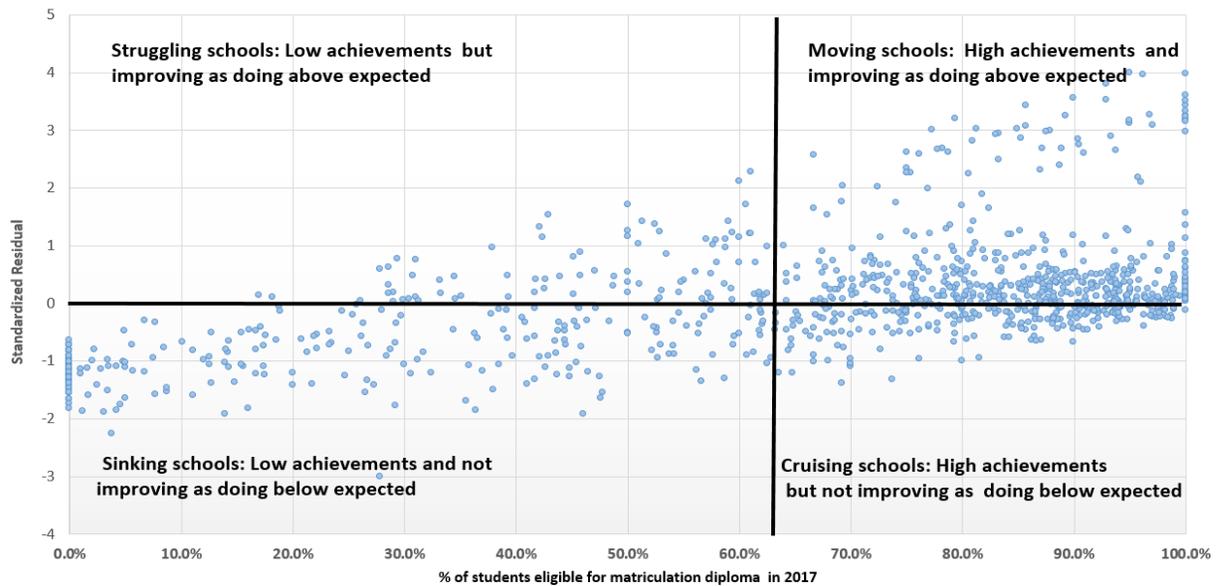


This part of the report is organized along the four research questions.

#### **Q1. Are schools improving in the rate of students who are eligible for a matriculation diploma?**

Overall, each year there is an increase in the percentage of students who are eligible for a matriculation diploma, as shown in Figure 2. However, based on 1190 schools, we found that changes in the percentage of students eligible for a matriculation diploma are uneven across schools, as there are schools that are improving over time while others may accomplish less than expected from their prior achievements. This variation between schools allows us to sort schools into four types as defined and based on Stoll and Fink's (1996) typology. This typology is based on two dimensions: effectiveness and improvement. Based on our data, effectiveness is operationally defined as the level of school achievements in 2017 (presented on the X axis) whereas improvement is operationally defined as the gap between the actual school achievements in 2017 compared to those expected based on previous 2015 achievements (measured in a standardized score- presented on the Y axis). Examples of these school types are provided in Appendix E, that analysed five high school affiliated to TALI. To be added .The four types of schools are presented in Figure 4.

Figure 4: Four school types defined by effectiveness and improvement



1. **Sinking schools** are defined as having below average achievements (below  $M=61\%$  of the school students who were eligible for a matriculation diploma in 2017) and performing below (below zero) expectation based on 2015 achievements. They can be considered as failing schools, facing difficulties in changing. These schools compose 26%.

2. **Cruising schools** appear to be effective, however, they seem not keep pace, and they begin to lose their advantage. These schools achieved above average in 2017, however, performed below expectation. These schools constitute 27% of our sample. It is reasonable to assume that schools with a very high percentage of students eligible for a matriculation diploma in 2015, will do less well in 2017, due to statistical reasons (as regression toward the mean). Yet, cruising schools, can raise the question regarding how to maintain success (as moving schools). Further, it may demand to explore if there were changes in schools that led to the decrease in their achievements (such as changes in the social composition of the students' body)<sup>7</sup>.

3. **Struggling schools**, represent schools that were below average in 2017, however performed above expectation. These schools, although may not do very well and may lack

<sup>7</sup> In cruising schools, there was a significant decrease in schools' SES from 4.37 in 2015 to 4.49 in 2017.

the skills to be productive, they are willing to succeed. These schools, constitute 9% of all schools. Which is a small number of schools.

4. **Moving schools** are assumed to be effective, they are considered to have the “skills and the will to get there” (Stoll & Fink, 1996, p. 88). These schools achieved above average, and improved as they kept working and developing, and they performed above expectation. 38% of the schools are classified as moving schools.

Overall, we could find some changes as 47% of the schools improved their achievements (hereafter referring to eligibility to a matriculation diploma)(both moving and struggling schools) by performing above their expected prior achievements and about 65% of the schools had above average achievements (both cruising and moving schools). However, the changes that occurred among schools (upward or downward) are small as can be seen from Figure 4, which indicates that most schools concentrate around the Y axis average<sup>8</sup>.

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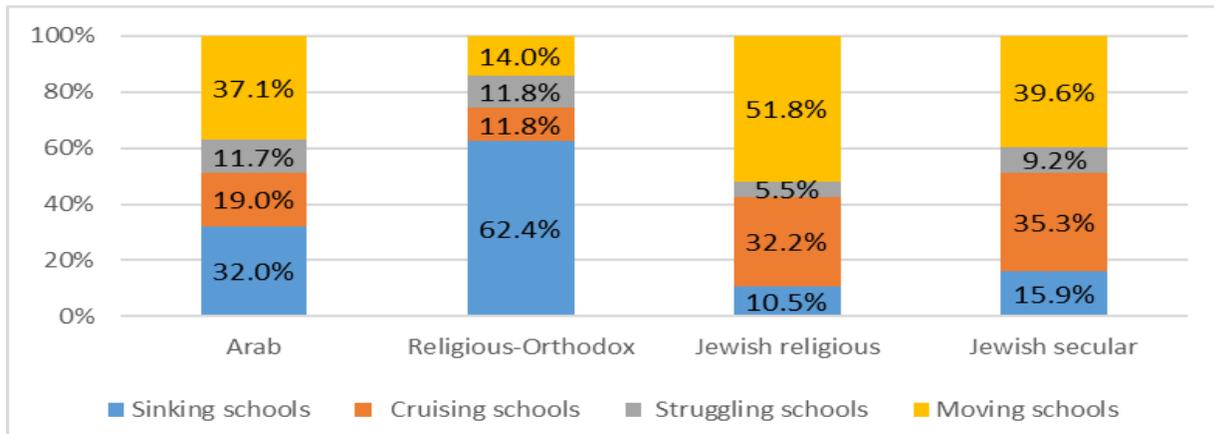
<sup>8</sup> Analyses conducted for outlier schools (improvement of  $-/+ 2 SD$ ), yield the similar main results as for the enter sample.

**Q2. What are the social (socio-economic status, sector and geographic area) and teaching force characteristics that are related to school improvement?**

In examining the social characteristics of the four types of schools, we addressed the sectoral affiliation, school socio-economic composition, geographic location and teaching forces, as presented below.

**A. Social Characteristics**

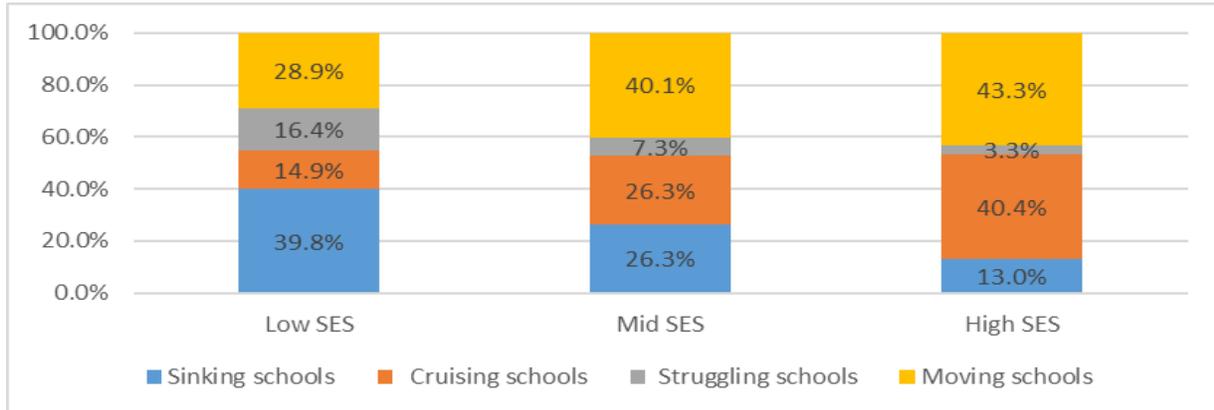
*Figure 5: The distribution of school types by educational sectors (in percentage\*)*



\* $P < .05$ , between sectors.

Schools in the Jewish religious sector appear to be improving the most (moving and struggling schools are 57% of all schools). The Jewish secular and Arab sectors improved to a similar extent (49% of the schools in each sector). In all sectors, struggling schools were at a relatively lower rate than other types of schools. It was also found that sinking schools were more prominent in the Arab and Ultra-Orthodox schools; whereas cruising schools were more prominent in Jewish secular and Jewish religious schools.

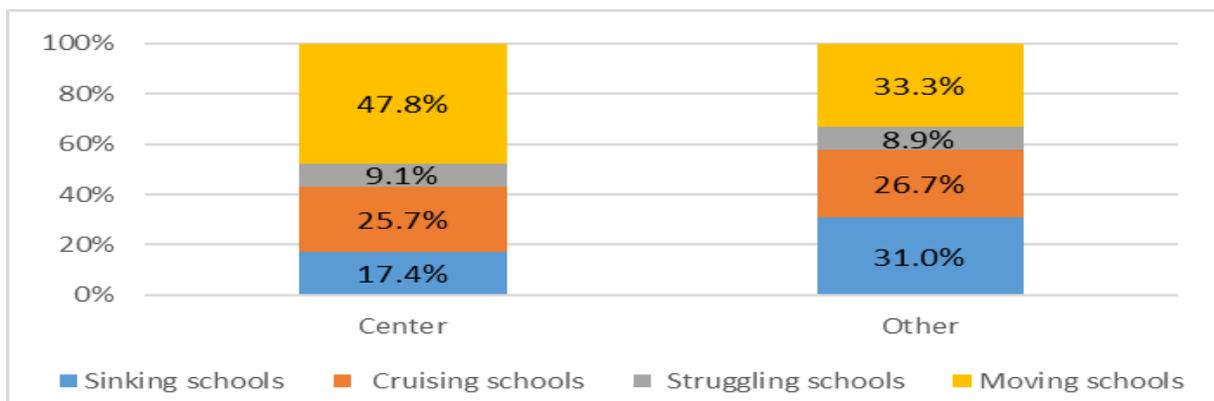
Figure 6: The distribution of school types by schools' SES (in percentage\*)



\*P< .05

While in all levels of schools' SES there was a similar percentage of schools who improved their achievements (moving and struggling schools- around 45%); in low SES schools, struggling schools were more prominent than in mid or high SES schools (16% versus 7% or 3% respectively). Further, in low SES schools, there was a high percentage of sinking schools, while in high SES schools there was a high percentage of cruising schools.

Figure 7: The distribution of school types by geographic location (in percentage\*)



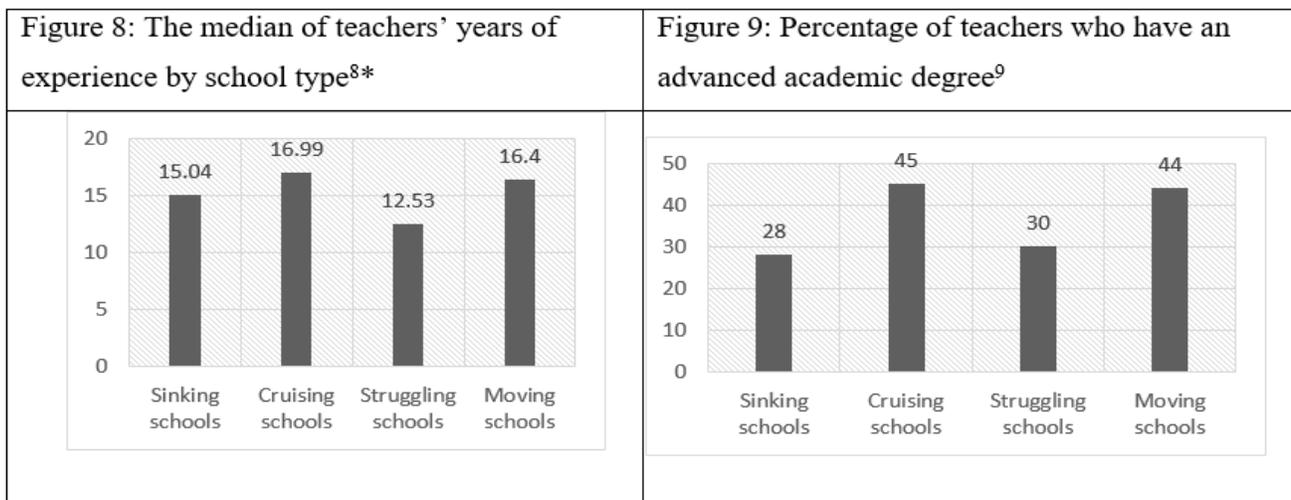
\*P<.05

Based on Figure 7, it emerged that more schools located in the center of Israel improved their achievements compared to schools in other areas (57% versus 42%). In the non-center areas there were more sinking schools.

*Overall, sinking schools are mostly dominant in less advantageous contexts: Arab sector, low SES schools and non-central geographic locations. In contrast, moving schools, are affiliated with the Jewish-religious sector at the center of Israel and are of a high socio-economic student composition. It should also be advised that there are Arab schools, which are defined as moving schools. Apparently, in contrast to other educational sectors, the Arab sector seems to be more polarized: having a high concentration of effective alongside ineffective schools.*

## B. Teaching Force Characteristics

Two features of the teaching force were examined: seniority, i.e. median years of teaching and formal qualifications as reflected in the level of education, i.e. % of teachers with MA or higher degree.



\* $P < .05$

Based on Figure 8 and Figure 9, we can learn that in moving and cruising schools, teachers have more seniority and are more qualified than in sinking or struggling schools. This goes along the research literature that in disadvantaged schools' teachers tend to be less qualified (Hammond-Darling, 2006; for Israel, Maagan, 2017). A multivariate analysis (discriminant

analysis-see appendix A) in which educational sector, school's SES and geographic location, and teachers' characteristics and school's size were included, provided that the major differences between the schools (33 % of the variance) are attributed to schools' distinctions along their achievements:

- Those with **high achievements**, were large schools, affiliated with the Jewish religious sector and had a high percentage of qualified teachers (MA teachers).
- Schools with **low achievements**, were mainly low socio-economic schools, affiliated with the Jewish secular schools and had less qualified teachers.

Schools could be distinguished by improvement; however, this was marginal (explain only 3.5% of the school variances). Ostensibly, moving and cruising schools are similar in their social and teaching force characteristics. This is also true for struggling and sinking schools. Cruising and moving schools have a more qualified and experienced teaching force. If so, what is the distinction between them? Apparently, learning about what makes the differences between these four school types, and particularly between sinking and struggling schools, contributes to better knowledge about the factors that can help schools move on and improve? The next section will examine this issue.

### **Q3. What are the schools' pedagogic and socio-cultural factors that are associated to school improvement?<sup>9</sup>**

Referring to Q3, pedagogic and socio-cultural factors were developed and computed by the National Center for Assessment and Measurement (RAMA) at the Ministry of Education based on questionnaires administered to students and teachers. Adapting these factors to the research literature (Preston, et al., 2017), and to the classification of secondary factor analysis (not presented), provided nine factors. These factors representing pedagogical leadership (related to the school principal) and school pedagogic and socio-cultural scales<sup>10</sup> as presented in Table 1.

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<sup>9</sup> From this part forward, data regarding the Ultra-Orthodox sector was missing. Thus, this sector was not included in the analyses.

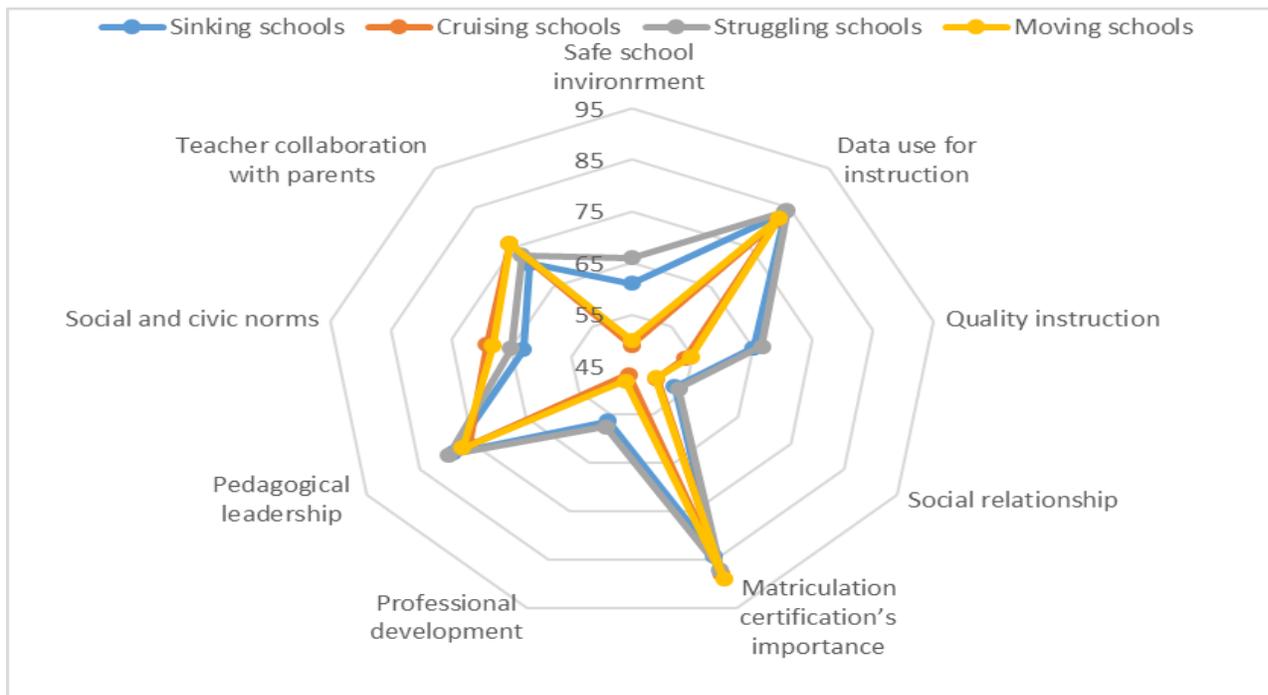
<sup>10</sup> Three factors were based on one scale. All other six school factors were composed of several scales, based on second order factor analysis. The correlations between the factors were on average around .40, with a range between 0.20 to 0.76.



Table 1: School pedagogic and social factors, their reliability and composition		
School Factors	Teachers' source	Students' source
<b>Pedagogical Factors</b>		
<b>Core technology with focus on quality instruction</b> (Cronbach's $\alpha = .94$ )	-Using differentiated teaching methods	-Effective work practices and assessment -Receiving assessment and feedback from teachers -Perceiving teaching instruction as interesting -Schools' efforts to encourage students' curiosity and motivation to study -Efficacy, ability, curiosity and interest in learning -Students' capability of self-learning strategies
<b>Professional development</b> (Cronbach's $\alpha = .73$ )	-Teachers' teamwork -Professional development and promotion of teachers -Designing teachers' development processes - Supporting novice teachers	
<b>Pedagogical leadership</b> (Cronbach's $\alpha = .87$ )	One scale based on 5 items as the school principal leads pedagogical innovations	
<b>Data use</b>	Data-based teacher learning	
<b>Socio-cultural factors</b>		
<b>External relations</b> (Cronbach's $\alpha = .87$ )	Computed as one scale including 4 items referring to teacher-parent collaboration	
<b>Social relations</b> (Cronbach's $\alpha = .78$ )		-Positive relationships between students -Close and caring relationships between teachers and students -Appropriate behavior of students in the classroom
<b>Social and civic norms</b> (Cronbach's $\alpha = .68$ )	-Schools' efforts to encourage civic social engagement	-Students' leisure activities -Social leadership development and volunteering -Schools' efforts to encourage civic social engagement
<b>Matriculation diploma's importance</b> (Cronbach's $\alpha = .74$ )		One scale including 5 items: Perception of the importance of a matriculation diploma for students' future. Representing a meritocratic approach, personal ability and achievement that affect future success at work and higher education
<b>Safe environment</b>		School efforts to encourage a sense of protection

First, we examine the differences between the four school types on the diverse school factors as reported by teachers and students and aggregated at the school level. It was found as presented in Figure 10, that there is a similarity between struggling schools and sinking schools and between moving and cruising schools. That is, here too, the main distinction is between schools with high achievements (above average) compared to low achievements (below average).

Figure 10: Means of pedagogic and social school characteristics by school types



\*All are significant except for pedagogical leadership.

Second, it was prominent, for all school types that schools are estimated as attributing a high importance to the matriculation diploma for students' future success. This is reasonable, in view of the fact that in high schools, students are getting prepared for the matriculation examination. Schools were also characterized as using data to a considerable extent. In addition, there are significant differences in all factors except for pedagogical leadership. Cruising or moving schools were found to put extra emphasis on encouraging social and civic social engagement than sinking or struggling schools. In contrast, both struggling and sinking schools were found to be higher in their quality instruction, professional development and in providing a safe learning environment than moving or cruising schools. *This indicates that in schools with*

*low achievements, there are increased efforts to provide the conditions and resources for learning and teaching. As for schools with high achievements, they seem to be focusing on social and civic norms, reflecting extra-curriculum activities, as more students reported volunteering or taking part in youth leadership activities.*

A multivariate analysis (discriminant analysis, see appendix B), in which we control for school's size, sector, school's SES and geographic location, provides that schools were mainly (45% of the school differences) distinct along their achievements, corresponding with the above finding:

- **Schools with low achievements** (struggling and sinking schools) were characterized as being high in their quality instruction and safe environment. That is, they seem to put effort in school core-theology.
- **Schools with high achievements** (moving and cruising schools) were high in cultivating social values as civic social engagement and emphasizing meritocratic values as the importance of a matriculation diploma.

However, schools were also distinct along their improvements with a distinction between cruising and mainly sinking schools compared to struggling schools, although to a lesser extent (only 10% of the variance between schools):

- **Sinking and cruising schools** were high in developing caring and supportive relations. These schools are mainly low SES and Arab schools.
- **Struggling schools** emphasized professional development, quality instruction, and meritocratic values as reflected in the importance of a matriculation diploma. These schools are mainly affiliated with the Jewish religious sector.

Thus, the main distinction between schools is by level of achievements. *There are two central and consistent types of school factor- norms such as perceiving a matriculation diploma as important and learning or civic behavior, and **learning and teaching** as quality instruction, providing a safe environment that allow to focus on learning and professional development, which characterized schools.* Low-achieving schools emphasize on teaching as facilitating learning processes tailored to students' needs. It is also possible that low-achieving schools are characterized by a less qualified teaching force than high achieving schools, therefore, school

principals need to invest in teachers in order to improve schools. Indeed, there are negative correlations between the percentage of qualified teachers or teachers' seniority in schools and the factors related to the quality of instruction and teachers' professional development.

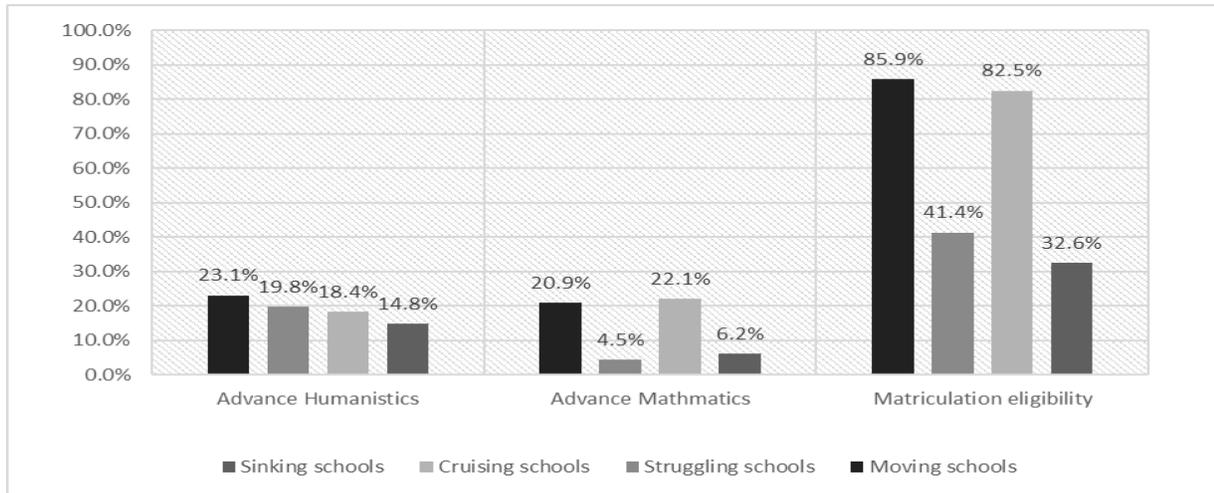
High-achieving schools mainly underline social norms with an emphasis on meritocratic norms, which place the attainment of a high school diploma at the center. The extent to which they support students' learning by providing quality personalized instruction seems to be less than in low achieving schools. It can be argued that in these schools, the responsibility for learning lies with the students themselves. This can be found, for example, in affluent, high-achieving schools, in which many students take private lessons (Addi-Raccah, 2019).

Nevertheless, it should be elucidated as disclosed in struggling schools that low achieving schools, which strive to improve, need both strong values and quality instruction, with emphasis on teaching and learning. While up to this point we focused on schools, the next section examines and focuses on the students as individuals.

**Q4. What are the schools' pedagogic and socio-cultural factors that predicate students' probability to be eligible for a matriculation diploma? Are these factors differing by school improvement?**

This part referred to the matriculation eligibility, matriculation with advanced math and matriculation with advanced humanistic school subjects (history, literature and bible). First we examined students' matriculation eligibility by the four school types.

Figure 11: The percentage of students who are eligible for a matriculation diploma, with advanced math and with advanced humanistic core school subjects, by school type.



The findings present that in moving and cruising schools more students are eligible for a matriculation diploma, and for a matriculation diploma with advanced math. It appears that in struggling and sinking schools, among the students who gain a matriculation diploma, only a few gains a matriculation with advanced math. While addressing matriculation with advanced humanistic school subjects, we found that it is relatively more prominent in moving schools rather than in the other school types<sup>11</sup>. Apparently, in struggling schools, the improvement in the percentage of students eligible for the matriculation diploma, is not related with achieving the ‘valuable’ matriculation diploma, with advanced math (see below)

### Matriculation Diploma

In examining the probability of being eligible for a matriculation diploma (base on a linear multilevel analysis, presented at Appendix C) the following findings emerged:

Individual background variables (girls, academic track, high parental educational) are related to the high probability of attaining a matriculation diploma. Students in schools of high

<sup>11</sup> Humanistic school subjects are mostly in the Jewish religious sector (100% of the students who are eligible for a matriculation diploma take these school subjects-mostly Biblical studies).

compared to low SES, and students in Jewish religious schools compared to Arab or Jewish secular schools, have more chances to be eligible for a matriculation diploma.

Three out of nine pedagogic and socio-cultural school factors were related to matriculation eligibility: quality instruction, safe school environment and perceiving matriculation diploma as important. In schools that place more emphasis on instruction, the predicated probability of students to achieve a matriculation diploma is less<sup>12</sup> than in schools in which there is less emphasis on this matter. At first glance, this is an illogical finding. However, this can be related to lack of causal relationships between two factors. This study does not enable the identification of causality, but rather allows to describe and examine the relationships between factors. Accordingly, the trend for schools to invest in quality instruction does not indicate that the quality of instruction leads to low achievements, but rather that in low-achieving schools, efforts to improve achievements are likely to be made by investing in better personalized instruction that fits students' needs. This process does not produce immediate results, but where the teaching force is in the first place "less qualified", reinforcing teaching and instruction, may over time contribute to high achievements (some indications are presented below).

In schools in which students have internalized the importance of a matriculation diploma for their future, the probability for being eligible for a matriculation diploma<sup>13</sup> is more than in schools where achieving the matriculation diploma is less dominant. It was consistent that in **all** school types, demonstrating to students how a matriculation diploma is important for their future, was positively related to matriculation eligibility, highlighting the significance of setting clear goals and mainly providing a meaning to students' learning.

A safe school environment also predicated a high probability for matriculation eligibility<sup>14</sup>. Social relations between teachers and students, were found to have a threshold level of significance ( $p < .06$ ), indicating that caring and supporting relations predicted a lower probability of being entitled to a matriculation diploma. This stands against prior studies emphasizing the importance and positive effects of student-teacher relations on achievements. However, most of these studies were based on elementary schools. Different requirements may be needed for high schools. From our data, it should be notified that the factors related to

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<sup>12</sup> by  $\exp(.327) = .721$  times

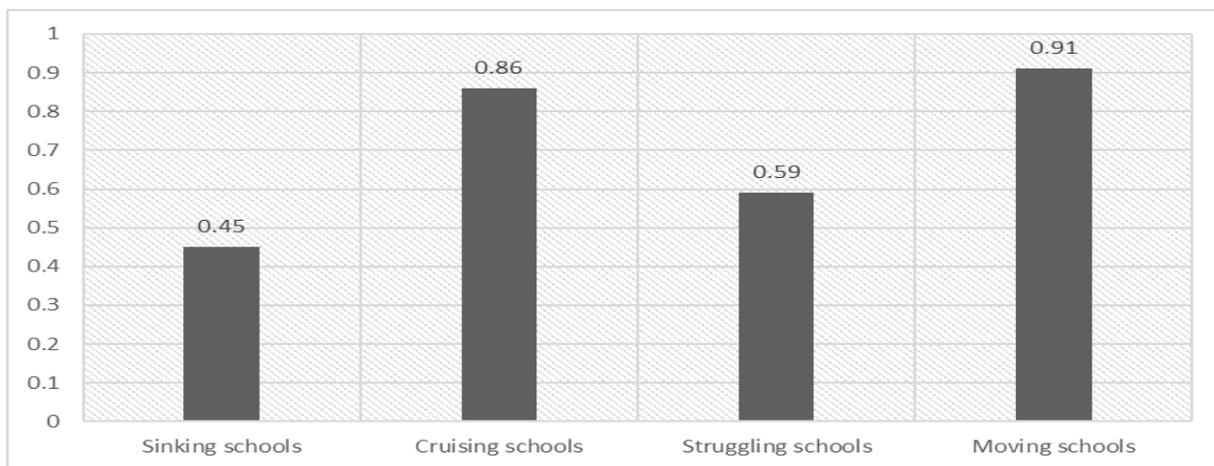
<sup>13</sup> about  $(\exp(.418) = 1.518)$  times more

<sup>14</sup>  $\exp(.140) = 1.151$

pedagogy and socio-cultural school factors add 20.3% to the explained variance between schools<sup>15</sup>. *That is, schools' processes that can be exposed to intervention make differences, above and beyond the hard to change and persistent schools' and individual's background factors (e.g. parents' education, school sectors or schools' SES).*

To illustrate the overall findings predicating matriculation eligibility, Figure 12 summarizes the probability of eligibility for a matriculation diploma for girls, in an academic track, in a Jewish-secular school with average parental education, attending an average school size and average SES school, but characterized by four different pedagogic and socio-cultural sets of factors, each representing an average school type: an average sinking school, an average cruising school, an average struggling school and an average moving school.

Figure 12: Predicated probability of eligibility for a matriculation diploma by school type



We can learn that studying in a school with the characteristics of pedagogic and social factors of moving schools and cruising schools, yields a high probability of eligibility for a matriculation diploma (91% and 86%), whereas for sinking schools it is the lowest (45%), less than for struggling schools (59%). In the last two school types, students have much less opportunities to gain the matriculation diploma, although they have **similar** backgrounds, such

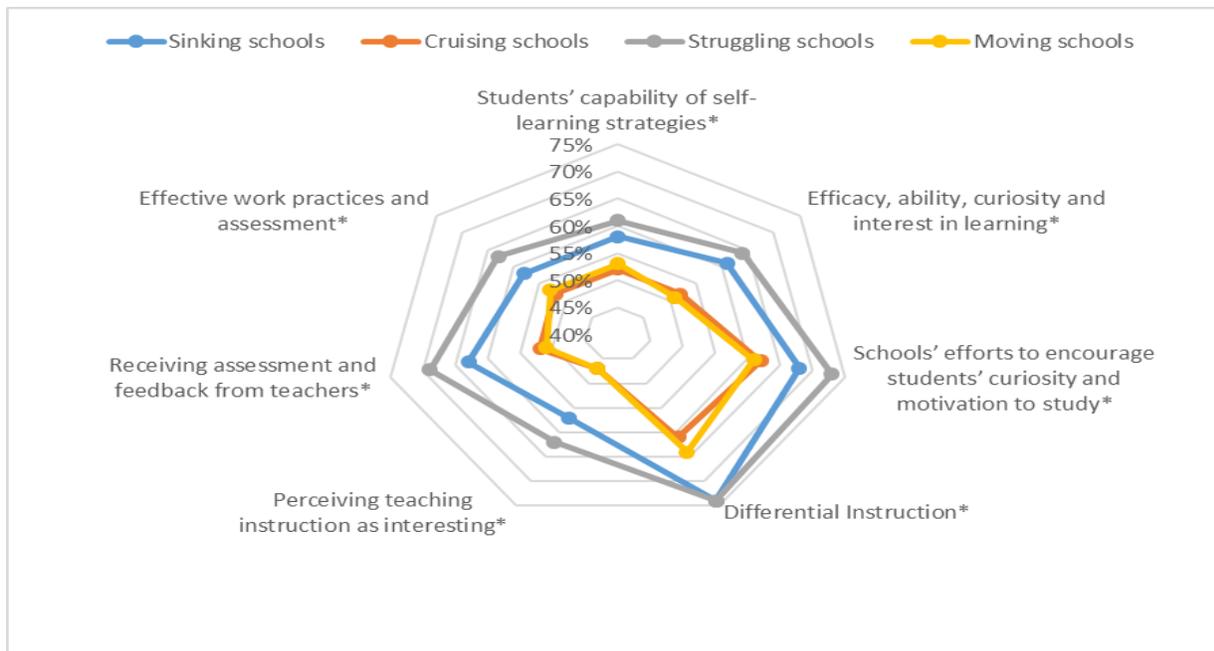
<sup>15</sup> The differences between school variance=.584 without school factors (not presented) and variance=.465 with school factors.

as social and learning characteristics (academic track and even prior achievement see Appendix D).

In the attempt to reveal the factors that enable schools to improve their achievements such as in struggling or moving schools, we studied the connection between pedagogic and socio-cultural factors and school types (presented in Model 3, Appendix C). **For struggling schools**, it was found that an emphasis on quality instruction increased the predication of eligibility to a matriculation diploma.

As shown in Figure 13, which focuses on the components that construct the factor of quality instruction, struggling schools tend to be high in all the components. As mentioned above, more personalized learning settings are expected to help students to meet their potential and learning needs (Sarid, 2017). However, an in-depth analysis is still needed in the interest of understanding how the diverse instructional practices are actually being carried out for the purpose of advancing school achievements.

Figure 13: Means of components of quality instruction by school types.



**For moving schools,** social relations increased the probability of obtaining a matriculation diploma more than in other school types. Although moving schools have, on average, a similar level of supportive relations between students and teachers as cruising schools and both school types are lower compared to sinking or struggling schools; in moving schools, students have greater benefit from their relationships with teachers than in other schools. Undoubtedly, there may be a different meaning for teachers' support, such as providing academic, social, or emotional support that may have different implications on achievements. However, we are unable to locate these dimensions within the existing data, except for the fact that in moving schools, there was a significant and positive correlation between the importance of a matriculation diploma and social relations ( $r=.24$ ). No significant correlations were found in other school types.

Overall, the findings indicated that based on matriculation eligibility, the main distinction that makes a significant difference is by the level of achievement rather than by improvement. This holds true for schools and students' levels.

### **A Glance to Social Inequality**

It was found that only in struggling schools, there is a slight decrease in the parents' education gap, compared to other schools and particularly compared to sinking schools. That is, in struggling schools, there are efforts to advance all students. Except for that, in the Israeli educational system, there is a persistent inequality of being eligible for a matriculation diploma by parents' education.

### **Advanced Math and Humanistic School Subjects**

In examining the probability of taking advanced math, it was found that students in moving and cruising schools tend to take advanced math more than students in sinking and struggling schools. That is, in the last two schools not only less students are eligible to a matriculation diploma, but their matriculation diploma may be perceived as less valued. In regard to advanced humanistic school subjects, no differences were found between school types. Apparently, struggling and sinking schools are more oriented toward a humanistic than a math matriculation diploma. Further, none of the school pedagogic and socio-cultural factors had a

significant effect<sup>16</sup>. In sum, these findings can indicate that the schools' socio-cultural factors, in addition to individual characteristic, predict the eligibility to matriculate, however, the distinctions regarding the type of high school diploma that a student will be entitled to, depend on the student's background and ability<sup>17</sup>.

#### **Part 4: Summary and Implications**

Following our four research questions and data analyses, several noteworthy points emerged.

##### **Q1. Are schools improving in the rate of students who are eligible for a matriculation diploma?**

- First, four school patterns were defined by two axes: achievement level and whether achievement has improved over time. In this context it was found that while schools in Israel are showing *signs* of improvement, there is, however, a concentration of schools that are required to cope with a challenging population in a socially disadvantaged environment (low SES and are located in the periphery). Sinking schools that have a low percentage of students eligible for a matriculation diploma and do not succeed to increase this percentage, constitute about a quarter of all Israeli schools. It is a challenge for policy makers and practitioners to establish practices to change this situation. Currently, several localities in Israel are concerned about how to increase students' eligibility for a matriculation diploma.

##### **Q2. What are the social (socio-economic status, sector and geographic area) and teaching force characteristics that are related to school improvement?**

- Throughout our analyses, the main distinction was between schools along their achievements, e.g. the effectiveness axis (2017). It was indicated that high SES

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<sup>16</sup> For advanced math, the findings indicated that high prior academic achievement, boys, parents' education and studying in a technological track, all significantly increase the probability of taking 5 math units. For advanced humanistic school subjects, the statistical analysis showed that high prior academic achievement, girls, parents' education and studying in the academic track, all significantly increased the probability of taking 5 units in core humanistic subjects.

<sup>17</sup> Based on analyses conducted on a sample of schools and students that included prior achievements in grade eight. These analyses are not reported here.

schools, schools with qualified teachers (MA education) and Jewish religious schools characterized schools with an above average percentage of students who are eligible for a matriculation diploma. While the first two factors are congruent with the research literature, the findings related to Jewish religious schools is novel and reflect changes that occur within the sectoral structure of the Israeli educational system which may carry implications for the ‘advantageous’ position of the secular Jewish education *vis-à-vis* the other educational sectors. While in the past, there was a considerable sectoral gap, currently this gap is narrowed and changing in pattern, with an advantage to the Jewish religious schools and less differences between Jewish secular and Arab schools.

- Teachers’ quality for school effectiveness, was found to be central factor. This is a very challenging and crucial issue as currently the educational system is faced with a shortage of teachers, a low public esteem, low socio-economic status and low ability (Bank of Israel Bank of Israel Annual Report 2018). This may have an implication for school success as there is a link between teacher status and student's performance (Dolton, Marcenaro, De Vries, & She, 2018). Further, teachers’ quality is pivotal for high schools where specialized and in-depth knowledge in the disciplinary field is required along with the understanding of adolescent development and complex learning processes that require high-level thinking abilities and skills. The role of teachers in school and individual achievements, as measured by eligibility to a matriculation diploma was approve in this study, through indication of teachers’ practices. Hence, there is a need for in-service teachers’ training that fits the school setting. This requires developing tailored programs for in-service training to act as catalysts for teachers’ effectiveness in sinking and struggling schools. These programs need to be based on collaboration between schools and academic institution.

**Q3. What are the schools’ pedagogic and socio-cultural factors that are associated to school improvement and achievements?**

- There is not a single school factor that could have a significant impact on schools’ effectiveness. Rather, there is a fabric of interconnected pedagogic and socio-

cultural factors. As such, an interdisciplinary research approach should be adopted, which takes into account pedagogy, psychology, sociology and ICT lenses. Although the present study did not address ICT, this aspect cannot be ignored at the current epoch.

- There is not a single school factor that could have a significant impact on the school effectiveness, as measured by the percentage of students eligible for a matriculation diploma. Rather, there is a fabric of interconnected pedagogic and socio-cultural factors. We should point out that there are two types of factors. One is related to *quality instruction, and teaching as professional development*. Recently, Leithwood, Sun and Schumacker's (2019) cross-sectional design that examines a different path through which school principals affect students' achievements, points out that the most significant path can be found on the Rational Path. This path is rooted in the knowledge and skills of school staff members with regard to curriculum, teaching, and learning (p. 5). Here too, we found this factor to be significant, mainly for disadvantaged groups.

- The second factor represents schools' cultural and social values with an emphasis on meritocracy (perception of the importance of matriculation) and civic engagement (extra curriculum activities), which were prominent across the diverse analyses performed at the schools. These two types of factors that were subject to intervention and change, distinguished between high and low achieving schools.

- Low-achieving schools' emphasis the core-technology of school: leaning and instruction. They report providing personalized instruction, focused on the learner, by developing high motivation, curiosity and self- learning students who receive ongoing feedback tailored to their individual needs. Investing in quality instruction appears to be a means for improvement as found in struggling schools. We can assume that for providing such quality instruction, there seems to be a need to strengthen the professionalization of the teaching force. This is a significant challenge as currently there is evidence concerning a lack of appropriate teaching force in schools in disadvantaged areas, in which sinking schools tend to be concentrated (Maagan, 2017).

- Investing in teachers only may not be enough for improving achievements. Rather, schools have to articulate their cultural logic of action, such as enhancing the idea of meritocracy through investing in practices that set the importance of school outcomes such as the matriculation diploma, as found in high achieving schools. In high schools, this is relatively an easy mission since matriculation holds a special position in Israeli society (it is part of the high school ethos) and its importance is transmitted to students not only through schools but also through parents. Hence, in their activities around a matriculation diploma, schools are aligned with their larger community. Strengthening this alignment can be a benefit (as found in high achieving schools in the Arab sector).

- However, the matriculation diploma, should not be the schools' sole outcome. Extending on social norms, in high-achieving schools there was an impact on civic and social activity. It is likely that in these schools, which are also characterized with more qualified teachers, extra curriculum activities play an added value for school success (Behtoui, 2019). These dimensions are significant and are associated with high achievements and as a necessary resource for future success (Bathmaker, Ingram, & Waller, 2013; Mullen, & Goyette, 2019). Apparently, giving meaning to students' learning (e.g., students' importance of a high school diploma, as a meritocratic value) and to their social activities (such as voluntary activity) and establishing social relations align with school missions, which seem to be factors that will enable the sustainability of school improvement, and assist in pushing forward schools toward higher achievements.

- As such, an interdisciplinary approach should be adopted, which takes into account pedagogy, psychology, sociology and ICT lenses. Although the present study did not address ICT, this aspect cannot be ignored at the current epoch.

**Q4. What are the schools' pedagogic and socio-cultural factors that predicate students' probability to be eligible for a matriculation diploma? Are these factors differing by school improvement?**

- The four school types provide different opportunities for obtaining a matriculation diploma, and hitherto a matriculation with advanced math, more than a matriculation with advanced humanistic school subjects. Regardless of their prior achievements and background characteristics, in moving and cruising schools, students had better chances to gain a matriculation diploma and a math oriented matriculation than 'similar' students in sinking or struggling schools.

- Few school factors predicated eligibility for a matriculation diploma. These factors were aligned with those found at the school level and included: *the quality instruction, perception of the importance of matriculation and a safe school environment.*

- Overall, it was complicated to identify school factors related to improvement. Two different factors were revealed. Quality instruction, underling the school core technology, had an added value for students in struggling schools. We can regard these schools as being in a process of pushing students toward achieving their matriculation diploma by providing instructional centers for learning and raising curiosity and motivation or providing feedback and personalized learning (as much as it could be measured in standardized scales). Social values and relations were found to have a particular impact in moving schools. In this context, the school climate as expressed in the student-teacher relationship seems to assist sustaining schools' success and supporting students in their learning. Yet, the 'nature' of this relationship and the content of the communication between students and teachers, will still need to be examined.

- Schools do make a difference for the individual student and not all students benefit from the educational system in a similar way. This demands us to strive and continue to find new ways for providing better chances to students. A

partnership between schools and an academic institution, which is based on sharing knowledge from the educational field and research, may lead to fruitful results. For that purpose, schools need to be willing to participate in ‘research adventures’ and researchers need to learn and be attentive to the voice of diverse educational stakeholders. This is most needed as schools do not work alone, but rather in collaboration with diverse and numerous stakeholders.

- Another point to be noted is related to social inequality. The intensive efforts to improve schools in Israel, carry some trends of decreasing inequality, as revealed between the Jewish and Arab schools. However, social-economic gaps continue to remain even in schools that sustain their achievements and keep improving. The socio-economic differences, appear between schools, but are also maintained within schools. In regard to issues of inequality, most of the pedagogic and socio-cultural factors measured by the Ministry of Education, hardly focus directly on issues of inequality.

**To summarize**, taking into account the research implications, advantageous and limitations, it is suggested that in order to attain school improvement, following questions should be address:

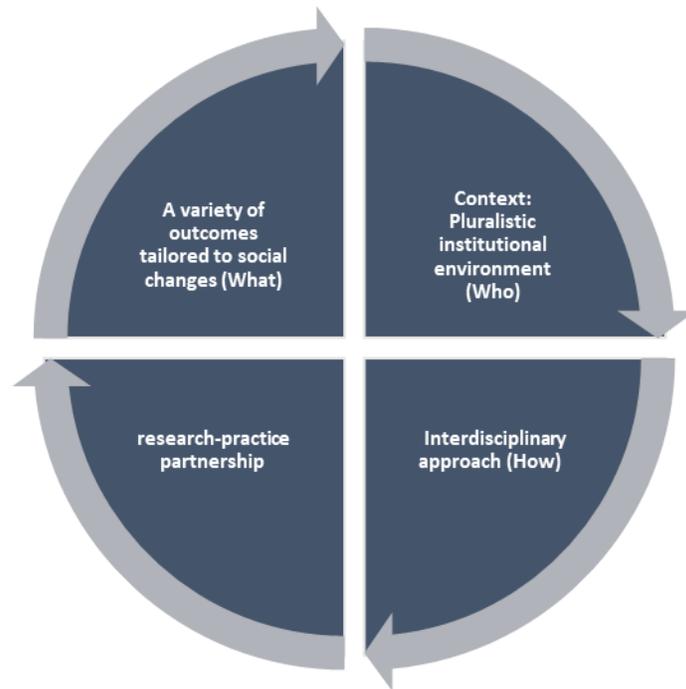
**WHO-** who takes part in the process of improvement? Schools are located in multiple interwoven contexts that need to be taken into consideration while engaging in a process of improvement.

**WHAT-** what needs to be improved? What is the goal for going through the process of improvement? This study focused on achievements. However, schools may need or be interested in achieving diverse goals. These goals can be set through a dialog between researchers/university and practitioners and based on data.

**HOW-** how to reach improvement? Depending on what needs to be improved, there is a need to fit and develop practices and processes that can be based on different disciplinary educational fields in order to meet the challenges posed.

**WHO, WHAT and HOW** is context dependent and based on the partnership between research and practice. The integration of these components are presented below.

### Dynamic Model for School Improvement



This model provides an elaborated approach for revealing schools' improvement that address to a variety of school outcomes, take into account schools in their contextual and plural environment, adopting an interdisciplinary approach (school factors encompasses diverse dimensions as psychological, sociological or ICT), an ongoing partnership between the academia (research base knowledge) and practice as experience by diverse stakeholders and practitioners.

A small step toward this direction will be set in the third phase of this project, that will focus on principals' roles in the four school types indicated in this report. In this study, school leadership was marginal, partly due to the lack of data. We could only address one pedagogical leadership. Although a school principal's leadership was not examined in this study, he/she is undoubtedly a crucial factor in promoting school achievements. As such, an in-depth research is still needed to decode the principal's work with teachers and students at various schools, and for understanding possible partnership between academia/research and practice. **This study will be in the third phase of this project.**

## **Part 5: Advantages, Limitation and Future Directions**

The present study has several advantages: it focuses on high schools, which gain less research attention in the context of schools' effectiveness and improvement (Preston, et al, 2017); it includes several data sources: students, teachers, schools and administrative data; it also includes data measured over-time as the measure of eligibility for a matriculation diploma (2015 and 2017) and school factors in 2015-2016 to create a sequence of events, and lastly, is based on a large data set of schools and students representing the entire educational system.

Yet, this study exposes the limitations of existing data. First, there is a lack of comprehensive data on in school- the school principal (Murphy, 2018). Second, pedagogic and socio-cultural factors tend to be highly related. In this study, we had to create second order factors in order to overcome the high correlations between the variables, however, this makes it difficult to better detect and identify meaningful variables. The next phase of this research may take this direction by focusing on principals' roles in the four school types indicated in this report.

The study emphasized the eligibility for a matriculation diploma, as a central school achievement. True, this variable is significant, but schools also have a significant social role. In the future, additional social measures such as the mobilization for compulsory military service, enrolling to higher education and strengthening democratic values and social equity should be considered.

The exploration of school pedagogic and socio-cultural factors was challenging, particularly when probing school improvement over time, as currently there is a lack of consistent data across time. There are hardly any schools that have been measured several (even two) times. In the future, this situation may change. A model of this type of research was already proposed (Benbenishty, Astor, Roziner, & Wrabel, 2016).

Finally, the present study is based on the available database collected over the years by the Ministry of Education and the National Center for Assessment and Measurement. This data is extensive and comprehensive, but there is limited research based on it (e.g. BenDavid –Hadar, 2014, 2015). The present study takes a small step toward using this data to point out the factors that can enable schools to improve on their high school achievements as reflected by their

matriculation eligibility. Future studies may continue taking this direction and elaborate the extensive cumulative data.

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## Appendixes

### Appendix A: Results of discriminant analysis for school types by social and teaching force characteristics

	Function1
Location at the center	-.210
Arab schools	.075
Jewish religious schools	.184
Jewish secular schools- reference group	
School SES	-.525
School size	.473
% of MA teacher	.404
Median of teachers seniority	.001
% of variance explained	.33*
<b>Group Centroid</b>	
Sinking schools	-.452
Cruising schools	.923
Struggling schools	-.621
Moving schools	.995

*Appendix B: Results of discriminant analysis for school types by pedagogic and socio-cultural factors*

	Function 1	Function 2
Location at the center	-.030	.205
Arab schools	-.098	-.478
Jewish religious schools	.210	.596
Jewish secular schools- reference group		
School SES	.198	-.557
School size	-.050	.015
% of MA teacher	-.264	-.492
Median of teachers seniority	.041	.012
Data-based instruction	.048	-.018
Safe school environment	.342	.128
Quality instruction	.833	1.205
Social and civic norms	-.582	-.170
Matriculation diploma's importance	-.589	.512
Professional development	.164	.448
Pedagogic leadership	-.123	.016
Social relations	-.203	-1.246
Teachers' collaboration with parents	.008	-.263
% of variance explained	.358*	.069*
<b>Group Centroid</b>		
Sinking schools	1.551	-.346
Cruising schools	-.481	-.091
Struggling schools	1.403	.979
Moving schools	-.374	.065

\*P<.05

*Appendix C: Results of non-linear multilevel analysis for predicating students' eligibility for a matriculation diploma (raw coefficients)*

	Model 1	Model 2	Model 3
Intercept	-2.499*	-1.333*	-1.294
<b>Individual level</b>			
Girl	0.757*	0.769*	.768*
Parents' education	0.591*	0.584*	.588*
Academic track	0.111*	0.117*	.114*
<b>School level</b>			
Location at the center	-0.074	-0.029	-.018
Arab schools	0.440*	0.589*	.476*
Jewish religious schools	0.460*	0.372*	.373*
Jewish secular schools-reference group			
School SES	-0.311*	-0.334*	-.358*
School size	0.305	0.139	.169*
% of MA teacher	.020	.016	.016
Median of teachers seniority	-.088	-.076	-.070
Data-based instruction		-0.085	-.082
Safe school environment		0.141*	.059
Quality instruction		-0.327*	-.275
Social and civic norms		0.018	.016
Matriculation diploma's importance		0.418*	.472*
Professional development		-0.002	-.002
Pedagogical leadership		0.027	.037
Social relations		-0.141	-.358*
Teachers' collaboration with parents		-0.009	-.008
Moving schools	2.561*	2.046*	1.882*
Struggling schools	0.645*	0.317**	-.067
Cruising schools	2.040*	1.560*	1.430*
<b>Interactions with significant school factors:</b>			
Moving schools* Matriculation diploma's importance			-.076
Struggling schools* Matriculation diploma's importance			-.208
Cruising schools* Matriculation diploma's importance			-.168
Moving schools* Safe school environment			.173
Struggling schools* Safe school environment			-.380
Cruising schools* Safe school environment			.055
Moving schools* Quality instruction			-.139
Struggling schools* Quality instruction			.907*
Cruising schools* Quality instruction			.199
Moving schools* social relations			.387*
Struggling schools* social relations			-.093
Cruising schools* social relations			.137
<b>Variance between schools</b>	.584*	.465*	.457*

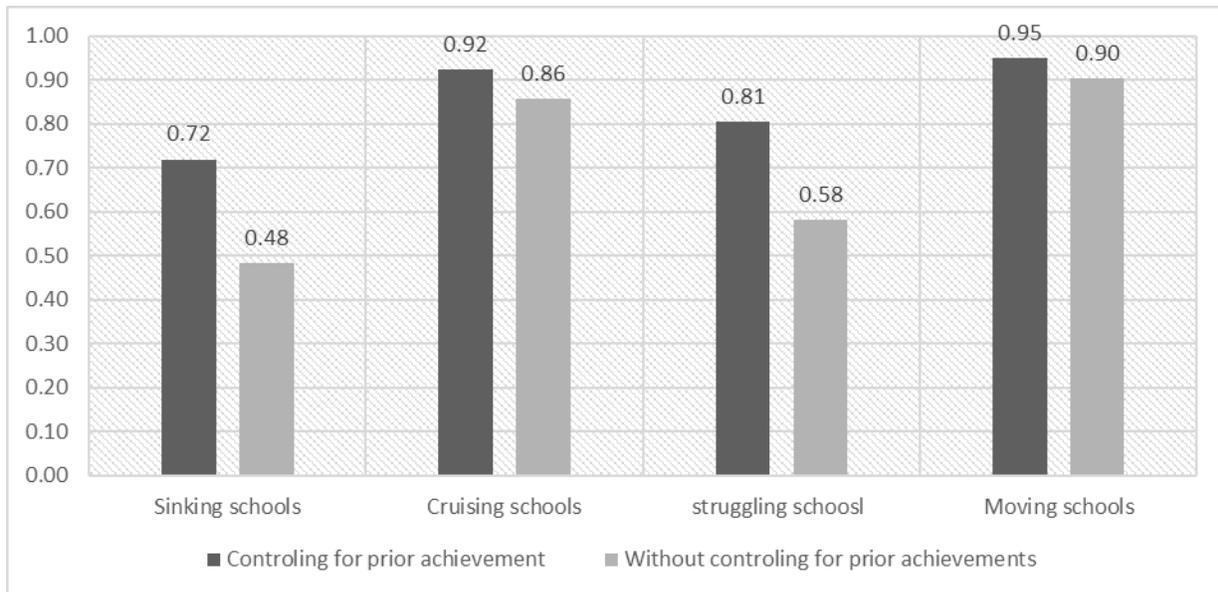
\*P<.05

*Appendix C: Results of non-linear multilevel analysis for predicating students' eligibility for a matriculation diploma (raw coefficients)*

	<b>Model</b>
Intercept	-.1196*
<b>Individual level</b>	
Girl	.774*
Parents' education	.167*
Academic track	.121*
<b>School level</b>	
Location at the center	-.126
Arab schools	.535*
Jewish religious schools	.352*
Jewish secular schools-reference group	
School SES	-.573*
School size	.120
% of MA teacher	.016
Median of teachers seniority	-.067
Data-based instruction	-.105*
Safe school environment	.094
Quality instruction	-.401*
Social and civic norms	.045
Matriculation diploma's importance	.405*
Professional development	-.032
Pedagogical leadership	.027
Social relations	-.057
Teachers' collaboration with parents	.008
Moving schools	2.067*
Struggling schools	.352*
Cruising schools	1.590*
<b>Interactions with parent education:</b>	
Parents education* Data-based instruction	.019
Parent education* Safe school environment	.023
Parents' education* Social and civic norms	.008
Parent education* Matriculation diploma's importance	.000
Parent Education* Professional development	-.007
Parent Education * Pedagogical leadership	-.012
Parent Educations* Pedagogic leadership	
Parent Education* Teachers' collaboration with parents	.004
Parent Education * social relations	-.005
Parent education*Moving school	.036
Parent education* Struggling schools	-.046
Parent education*Cruising schools	.058
Parent Education * Quality instruction	-.054*
<b>Variance between schools</b>	
<b>Variance of the effect of parent education</b>	<b>.123*</b>

\*P<.05

*Appendix D: The expected probability of being eligible for a matriculation diploma for an average girl in academic track in an average school in Jewish-secular school*



On a smaller student sample (about 10% of the cohort) we could do a comparative analysis with and without prior achievements in grade eight, for better revealed school effects. This figure demonstrated that even after controlling students' prior achievements, school factors and school types play a significant role in being eligible for a matriculation diploma. It is interesting to note that struggling schools do indeed succeed better than sinking schools. They have an advantage over sinking schools, which still needs to be explored. This goes as well for the differences between moving and cruising schools, although to a lesser extent.

*Appendix E: TALI- Jewish studies reinforcement program*

written by Yarden Sal-Man

The TALI (“Enriched Jewish Studies”) network of schools provides a pluralistic Jewish Studies program to approximately 50,000 students in 325 educational institutions from pre-school through high-school. TALI, which encompasses more than 12% of all secular public schools in Israel, offers the middle-way in Israel for Jewish education, tradition and Jewish identity.

TALI was established in 1976 and since 1987 it has been sponsored by the [TALI education fund](#) (TEF), which is authorized by Israel’s ministry of education to provide educational guidance and resources to all schools affiliated to TALI. <sup>18</sup>In high schools, the TALI program includes a special curriculum for 10th graders and for teachers’ development and in-service training.

High schools affiliated to TALI are:

- Branco Weis- Tiberias” high school.
- Yigal Allon high school- Yokneam.
- Beit Chinuch high school (Ironi G)- Jerusalem.
- Jules Braunschweig Traditional high school- Jerusalem.
- “Branco Weiss - Golan” high school.

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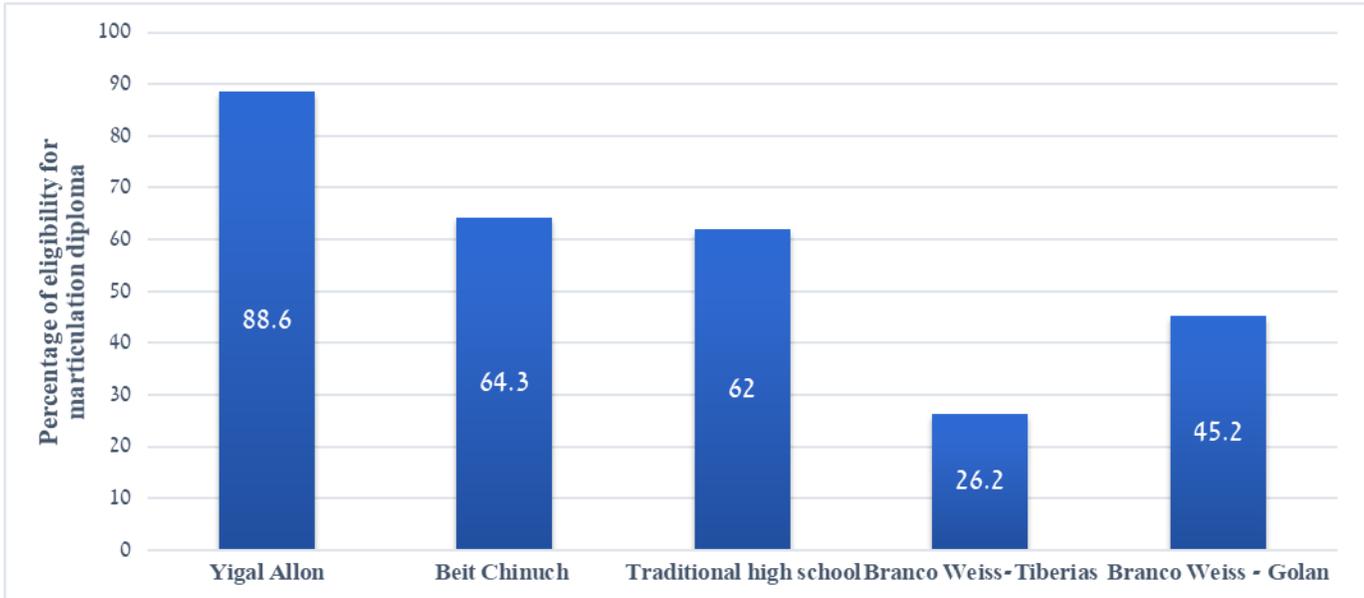
<sup>18</sup> Retrieved from:

<http://webcache.googleusercontent.com/search?q=cache:https://schechter.edu/about-tali-education-fund/>

School characteristics:

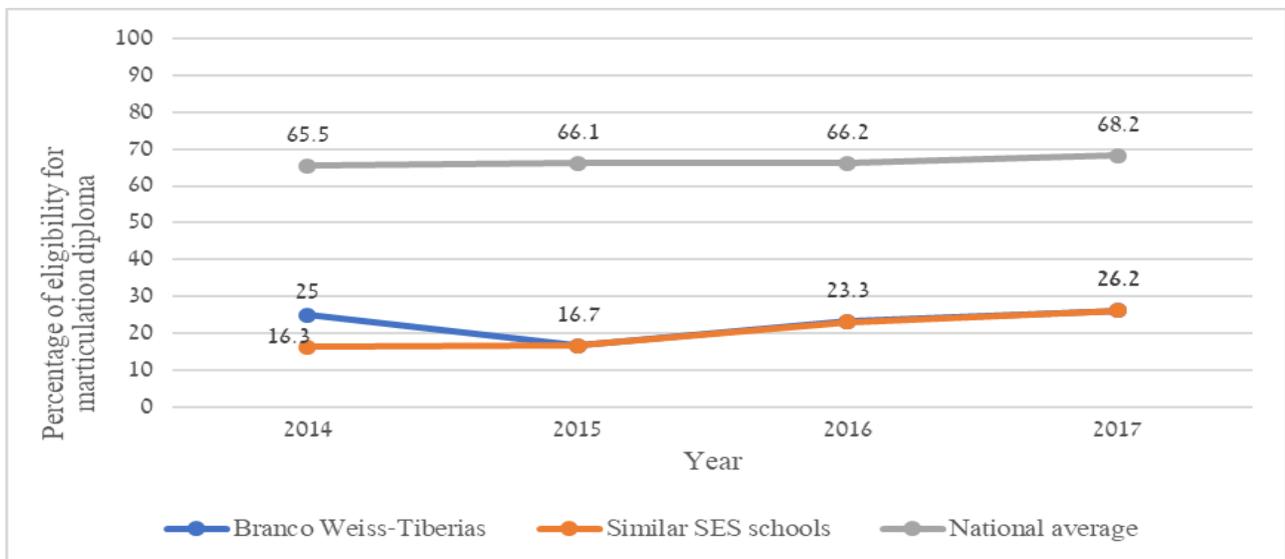
<b>High school name</b>	<b>Local authority</b>	<b>Grade strata</b>	<b>School</b>	<b>District</b>	<b>School socioeconomic index</b>	<b>Sector</b>	<b>School type</b>
Branco Weiss-Tiberias	Tiberias	9 <sup>th</sup> - 12 <sup>th</sup>	Jewish secular school	North	9 (Youth at Risk)	Jewish	Struggling school
Yigal Allon	Yokneam	7 <sup>th</sup> - 12 <sup>th</sup>	Jewish secular school	North	4	Jewish	Moving school
Beit Chinuch – (Gimel municipal school )	Jerusalem	7 <sup>th</sup> - 12 <sup>th</sup>	Jewish secular school	Jerusalem	3	Jewish	Cruising school
Jules Braunschweig Traditional high school	Jerusalem	7 <sup>th</sup> - 12 <sup>th</sup>	Jewish secular school	Jerusalem	3	Jewish	Sinking school
Branco Weiss - Golan	Ramot	9 <sup>th</sup> - 12 <sup>th</sup>	Jewish secular school	North	8 (Youth at Risk)	Jewish	Struggling school

## Percentage of students eligible for matriculation diploma in TALI schools (2017)

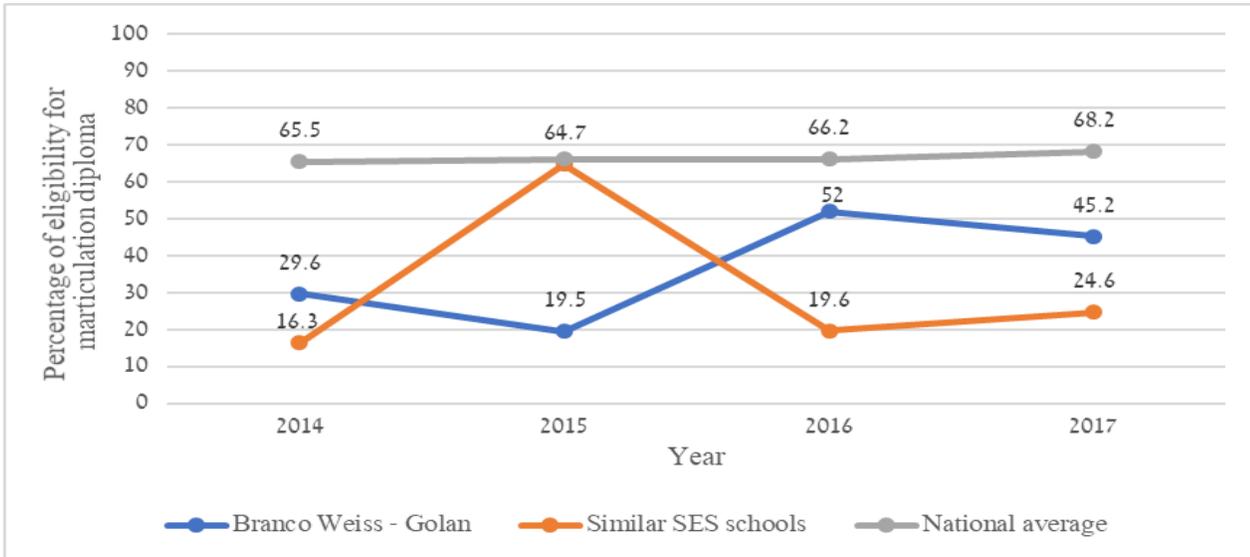


## TALI schools compared to similar SES schools and the national average between 2014-2017

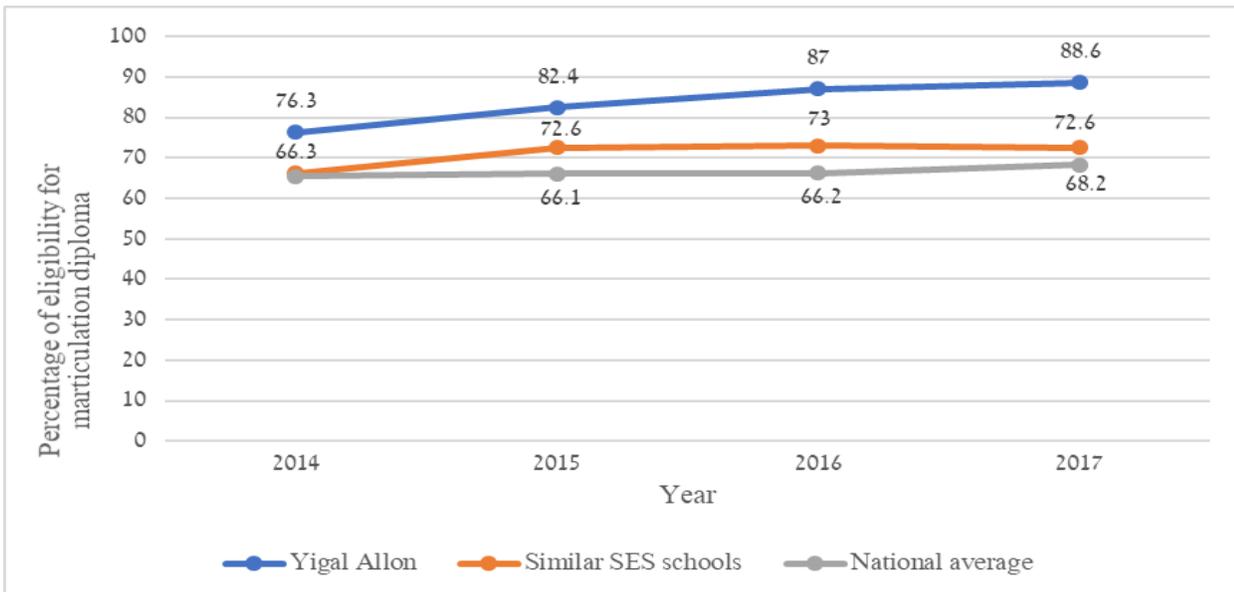
Percentage of students eligible for matriculation diploma in Branco-Weiss Tiberias compared to similar SES schools and compared to the national average



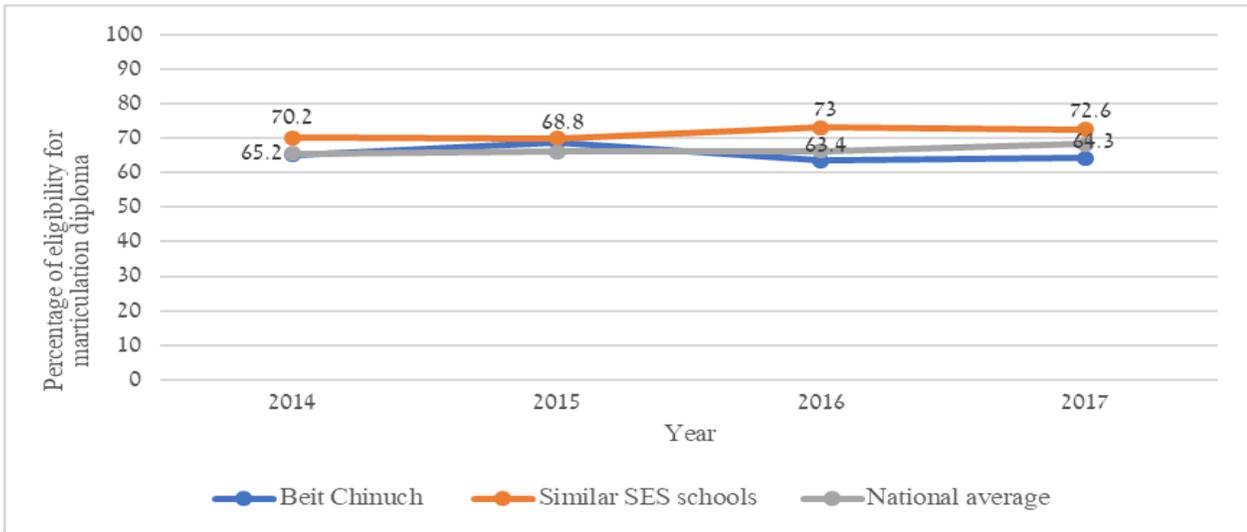
Percentage of students eligible for matriculation diploma in Branco-Weiss Golan compared to similar SES schools and compared to the national average



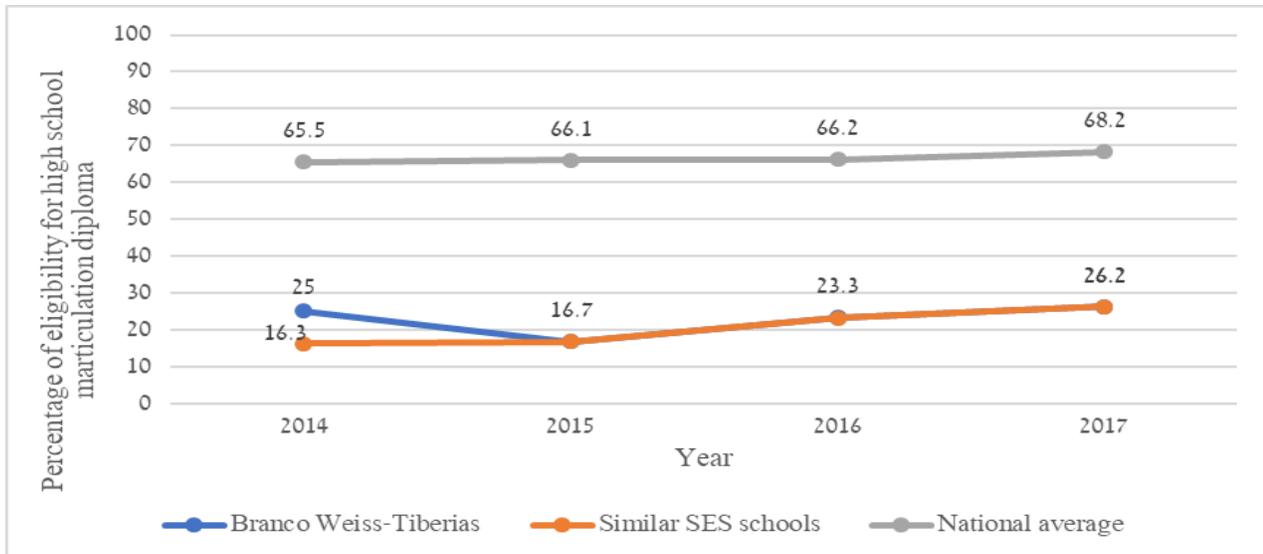
Percentage of students eligible for matriculation diploma in Yigal Alon high school compared to similar SES schools and compared to the national average



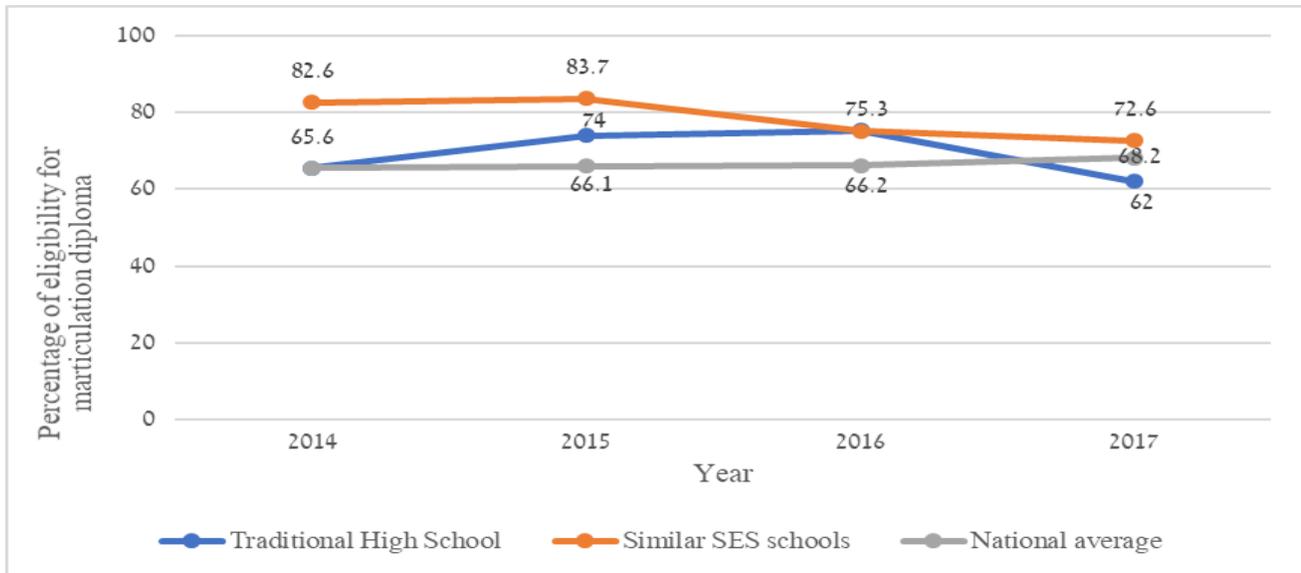
Percentage of students eligible for matriculation diploma in Beit-Chinuch compared to similar SES schools and compared to the national average



Percentage of students eligible for matriculation diploma in Branco-Weiss Tiberias compared to similar SES schools and compared to the national average



Percentage of students eligible for matriculation diploma in Jules Braunschweig Traditional high school compared to similar SES schools and compared to the national average



## Findings Description

It is evident that the low SES schools - Branco Weiss Golan and Branco Weiss Tiberias have a much lower percentage of eligibility for a matriculation certificate than the national average. Branco Weiss Tiberias has been climbing in recent years at the equivalent rate of schools with similar SES.

Branco Weiss School was found to be different with having a higher percentage of matriculation eligibility than similar SES schools<sup>19</sup>. It is evident that between 2015 and 2016, there was a significant increase in the percentage of eligibility for a matriculation certificate, and despite a decline in the past year, it seems that the school managed to maintain the high percentage of eligibility (relative to its previous achievements).

Yigal Alon School has increased the percentage of eligibility for a matriculation certificate throughout the years. In addition to steadily increasing eligibility, it is evident that the eligibility percentage of Yigal Alon School is higher than the national average, as well as similar SES schools.

Beit Chinuch School has been in previous years, above in parallel with the national average percentage of eligibility for a matriculation certificate. In the last two years, school achievements have dropped far

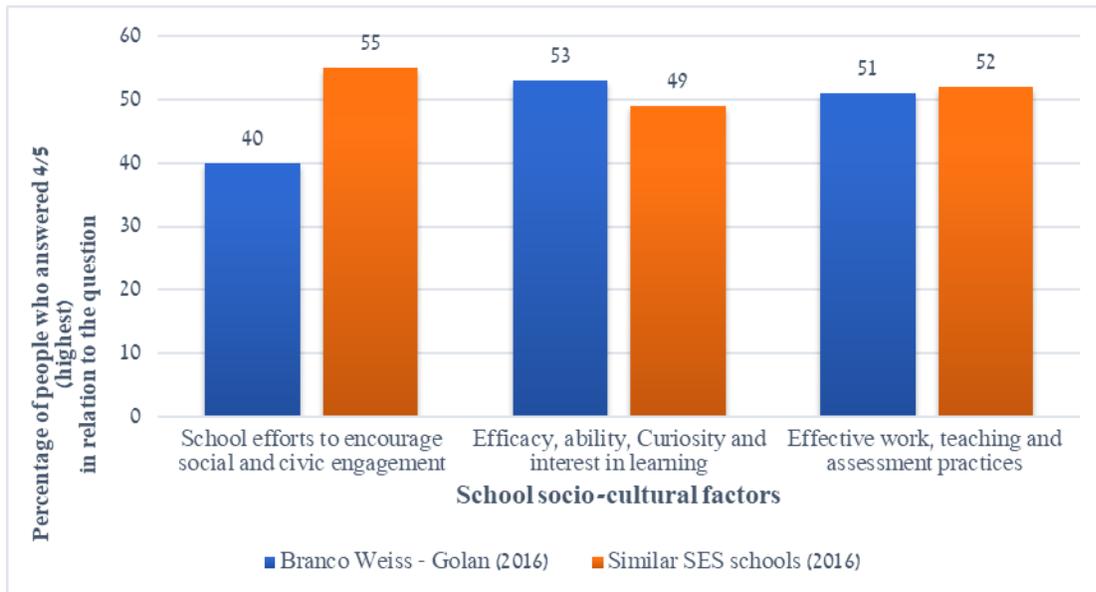
<sup>19</sup> Except for 2015, where there seems to be an estimated error in calculating similar SES school data by the Ministry of Education.

below the national average. Throughout the years, the percentage of eligibility for a matriculation certificate is reported to be lower, but close, to the average eligibility of schools with similar SES. The school is relatively stable in the percentage of eligibility for a matriculation certificate, but there has been some decline over the years.

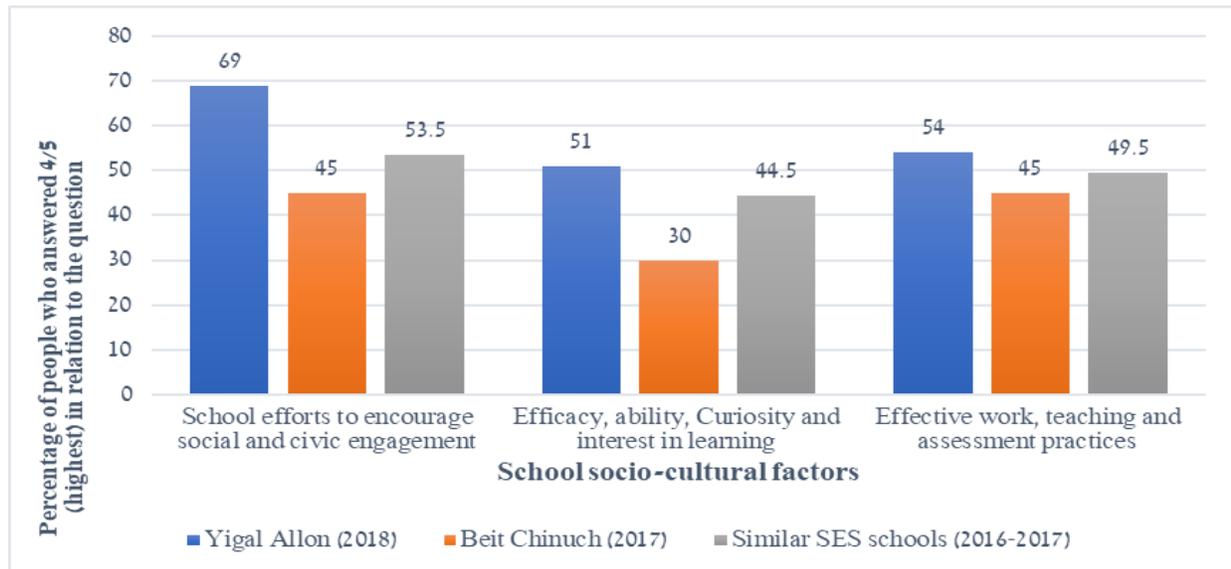
Jules Braunschweig Traditional School in Jerusalem was above/parallel with the national average in the first three years reported. It is evident that in the past year there has been a decline in its achievements regarding the matriculation certificate to a degree that its eligibility percentage was lower than the national average. Throughout the years, the Traditional School has attained a lower percentage of matriculation eligibility in comparison to schools with a similar SES, or a rate parallel to them at most. It is evident that the school was improving in previous years, however, in the last year it has reported that it is declining.

## School' pedagogic factors

Low-SES high schools- Branco Weiss-Tiberias and Branco Weiss – Golan compared to similar low SES high schools



Mid-SES high schools - Yigal Allon, Beit Chinuch and the Traditional high school, compared to similar mid SES high school characteristics in Israel



Looking at low SES schools, it can be seen that the Branco Weiss Golan School is reported to be less encouraging on social and civic engagement compared to similar SES schools. The school also has a parallel and a slightly lower score than similar SES schools considering effective work, teaching and assessment practices, yet it seems that the school scored slightly higher than similar SES schools in terms of the efficacy, ability, curiosity and students' interest in learning.

Yigal Alon School is higher than the national average of similar SES schools across all socio-cultural measurements, with the biggest gap being in assessing the school's efforts to encourage social and civic engagement. Beit Chinuch School's results are lower than the national average of similar SES schools in all socio-economic factors.