

School Climate, Classroom Climate, and Teaching Quality: Can Excellent Students Unravel this Connection?

Judy Goldenberg ¹ and Rama Klavir ²

¹ The Talpiot Academic College of Education; ² The Mofet Institute, Israel

Abstract

The present study examined the degree to which a teacher's practice in the classroom is influenced by external conditions at the school, and whether this influence is different in teachers from different teacher education programs. The study focused on the relationship among school climate, classroom climate, and teaching quality as they are perceived by teachers. These relationships were examined by means of an online questionnaire completed by two groups of teachers: graduates from the REGEV Outstanding Student Teacher Education Program (the Excellence Program), and graduates from traditional teacher education programs. The findings show a significant correlation between school climate and classroom climate and between school climate and teaching quality among graduates from traditional programs. This is not the case among Excellence Program graduates, where a weak correlation was found between school climate and classroom climate in the various measures (in some measures no correlation at all was found), and no correlation was found between school climate and teaching quality. The findings therefore indicate a weak influence from external factors, e.g., on school climate, on classroom climate, and even weaker influence on the teaching quality of Excellence Program graduates compared to graduates from traditional teacher education programs. The present article presents a number of possible reasons that might explain these differences, as well as the Excellence Program graduates' resilience to various external pressures.

Keywords: School climate; classroom climate; teaching quality; excellence in education; REGEV; program for excellent students.

School climate

School climate has been found to be one of the factors most influencing students' mental wellbeing, achievements, and improvement (or conversely, decline) in their cognitive, academic, social, and emotional functioning (Brand et al., 2003; Cohen, Pickeral, & McCloskey, 2008-9; Freiberg, 1998). Additionally, the professional literature indicates that a school with a healthy climate is a school with an effective leader, where the teachers are satisfied with their work and colleagues, and consequently they are also more involved in school life and more willing to invest in developing quality education and teaching methods (Freiberg, 1998; Goddard et al., 2000; Heck, 2000; Hoyle, English, & Steffy, 1985; Thapa, Cohen, Guffey, & Higgins, 2013).

There is not one universally agreed-upon definition of school climate. Practitioners and researchers use a range of terms, such as atmosphere, feelings, tone, setting, culture or milieu of the school (Freiberg, 1999; Homana, Barber, & Torney-Purta, 2006; Lindahl, 2009; Tagiuri, 1968; Zhu, 2013). Cohen et al., (2009) suggest that school climate refers to the quality and character of school life. "School climate is based on patterns of people's experiences of school life and reflects norms, goals, values, interpersonal relationships, teaching and learning practices, and organizational structures [...] However, school climate is more than individual experience: It is a group phenomenon that is larger than any one person's experience [...] of the character of the school" (p. 182). While adopting this reference, Collie, Shapka & Perry, (2012) add that: "school climate is determined by the quality of relationships between individuals at a school, the teaching and learning that takes place, collaboration between teachers and administrative staff, and the support present in a particular school" (p. 1189) and therefore the school climate influences all members of the school.

Along the years, different researchers adopted different dimensions in order to analyze the influence of schools' culture on various educational aspects (e.g. : Dunn & Harris, 1998; Goldkind & Farmer, 2013; Hofstede, 1994, 2001; Phillips, 1997; Leadbeater et al., 2015; Thapa et al., 2013; Zhu, 2013).

In the present study we referred to Hoy, Tartar, and Kottkamp (1991) who defined school climate in terms of the staff members' "organizational health". Their definition is based on the perception whereby the teacher belongs to an organization and influences and is influenced by the organization's climate. The definition includes a detailed construct that enables identification of school climate in observable behavioural terms in accordance with three aspects: technical, administrative, and institutional.

As we shall see, school climate influences both classroom climate and teaching quality. In general, it seems that when the climate is positive students are less violent, they have a high sense of safety, and their achievements are high both academically and behaviourally. With regard to teachers it has been found that in addition to their success in leading their students to high achievements, they also demonstrate high commitment to the system, high collegiality and teaming, work survivability, and a high degree of satisfaction with the system and teaching (O'Brennan & Bradshaw, 2013).

Classroom climate

The concept of classroom climate was first coined by Walberg (Walberg & Anderson, 1968), and then made popular in Moos's (1973) work, initiating more than forty years of research on the nature of classroom environments.

Classroom climate is a broad term that includes multiple aspects, and researchers also refer to it as "classroom atmosphere" or "classroom environment", with reference to the room where teaching and learning processes take place, and to the factors participating in and influencing these processes and their outcomes (Dorman, Aldridge, & Fraser, 2006).

The construct itself is nebulous and hard to delineate. One reason is that there have been many different dimensions identified with classroom climate. Evans et al.,(2010) summarize the literature in this field and suggest that there are three differentiable components: (1) academic, referring to pedagogical and curricular elements of the learning environment; (2) management, referring to discipline styles for maintaining order; and (3) emotional, referring to the affective interactions within the classroom.

As cited in their research summary, Evans et al., (2010) illustrate how classroom climates have been found to be related to positive educational outcomes such as enhanced academic achievements, constructive learning processes, and reduced emotional problems, as well as to undesirable outcomes such as increased bullying and aggression, and social and emotional maladjustment.

Evans et al., (2010) summarize their overview of classroom climate research with the claim that "classroom-level analyses attribute classroom climate almost exclusively to the skills of the individual teacher" (p. 135).

Despite the considerable similarities between the components of school climate and those of classroom climate, each of them is distinctive (Cheng, 2001), especially in light of the fact that teachers usually teach in different classrooms and are required to adapt both the teaching materials and themselves (on a personal level) to each classroom.

Classroom climate is influenced to a high degree by school climate, and to a certain degree even reflects it and the culture prevailing in it. This is because both climates, school and classroom, are influenced by the environment and subject to external influences: political, social, cultural, and economic. However, whereas school climate is fixed, classroom climate changes from one class to the

next: classroom climate is connected to school climate and is influenced by it, yet within the same school each classroom has a unique climate. According to Anderson (1982), the teacher contributes to the nature of classroom climate and is also influenced by it. This is because the way a teacher manages the classroom influences his/her relationships with the students, their behaviours, and their attitudes to each other. Aspects of classroom climate have been researched with a variety of tools, including direct observations of the classroom environment, questionnaires, and interviews with students and teachers to obtain a description of how they perceive the climate in their classrooms (e.g., Mucherah, 2003).

Teaching quality

In his article, Berliner (2005) asks how do we know that America's three million teachers are competent, skilled, and qualified to teach, since, in his view, teaching should be examined, *inter alia*, by testing the ability of teachers to advance their students' learning. There are various methods, such as examining the students' standard of learning, or student feedback questionnaires on their teachers' teaching quality (e.g., Byrne & Flood, 2003; Felder & Brent, 1999; Gravestock & Gregor-Greenleaf, 2008). However, one of the most common methods for evaluating teaching quality is by questioning the teachers themselves. Teachers' self-evaluation is effective since it is readily available; in other words, it can be obtained in any educational setting. Moreover, since the teachers are evaluating themselves, i.e., in their own words, the findings can have considerable influence: they can engender listening, and reinforce identification (Marsh & Roche, 1997).

However, although there are diverse methods for testing teaching quality, the difficulty in examining it stems first and foremost from the difficulty in defining it: on the one hand, it is clearly evident that teacher and teaching quality considerably influence students' ability to learn and attain high achievements (Croninge et al., 2007; Rivkin, Hanushek, & Kain, 2005), and on the other, as Berliner (2005) contends, this is a nebulous construct that always involves value judgment and is influenced by cultural, social, and other factors.

Berliner (2005) summarizes and states that teaching quality includes both good teaching, i.e., the teacher teaches the required content using the appropriate methods, and effective teaching, i.e., the students indeed learn what the teacher is teaching. This approach mandates focusing simultaneously on three aspects: the characteristics of the teacher's teaching, the students' learning, and the nature of the environment, i.e., physical conditions, the means it provides, and the degree of social and emotional support. Thus Berliner (2005) in effect links teaching quality with school climate. This linkage is described extensively by other researchers (e.g., Cohen et al., 2009; Thapa et al., 2013).

High personal abilities and resilience to external influences

Thus far we have presented the connection between school climate and the two variables: classroom climate and teaching quality. The implication is that when school climate is positive or healthy, there is a good chance that teaching quality will be high, and vice versa: when a negative school climate prevails it will influence classroom climate and the teachers' teaching quality.

The question is whether the connection between school climate and classroom climate or teaching quality is similar in different teachers. In other words, can this connection be positive in some teachers and be either nonexistent or negative in others? This question is especially significant in cases where school climate is not good, since it can also influence the classroom and teaching quality. This leads to the question: Is it possible that some teachers will not be influenced by this negative climate, and the climate in their classroom and the quality of their teaching will be positive even when a negative climate prevails in the school?

If we had to find a population of teachers who are resilient to external influences in contrast with another group of teachers, we would need to find a group that can function well even when external conditions pose difficulties for them. However, what kind of teacher population can we

choose for this kind of study? What should characterize its members so that we can hypothesize that they will be less influenced by external pressures and conditions?

There are a number of characteristics that reduce the influence of external pressures, and one of the main ones pertains to personal abilities. The research literature indicates that learners with high cognitive abilities (e.g., gifted students) are characterized, more so than other learners, by belief in their abilities to do and to influence despite difficulties in the external environment and failures. It seems that this is associated with their perceptions of their abilities, belief in their abilities to succeed, their internal locus of control, which leads them, more so than others, to trust themselves, to demand from themselves, and to act with integrity in accordance with their abilities and views (Ablard, 1997; Assouline et al., 2006; Colangelo, Kelly, & Schrepfer, 1987; Litster & Roberts, 2011; Yong, 1994). It is particularly interesting to note that these characteristics, which are associated with the learners' high abilities, enable resilience to external pressures in gifted students, including in higher education institutions (Anazonwu, 1995; Mathiasen, 1985; Rinn & Cunningham, 2008). Contending with external influences is manifested in various ways: refraining from copying in exams; displaying more ethical behaviours; having behaviours guided by personal principles rather than being swept up after others; or using previously learned strategies to achieve success (Coleman & Mahaffey, 2000; Kirkpatrick et al., 2008).

The findings described by Rinn (2007; Rinn et al., 2014) are especially interesting and indicate characteristics particularly prominent in high-ability students studying in excellence programs. These students' perceptions of their abilities, and their beliefs in their abilities to succeed in their own right (i.e., due to their abilities, efforts, and endeavours), are higher not only than those of lower-ability students, but also than those of high-ability students who do not study in excellence programs.

Our hypothesis posits that teachers who have been defined as possessing high abilities, e.g., Excellence Program graduates, are likely to be less affected by external influences such as the school climate. This is likely to be expressed in a weaker correlation between school climate, classroom climate, and teaching quality among Excellence Program graduates than among graduates from traditional teacher education programs.

Excellence programs in teacher education colleges in Israel

Within teacher education in Israel there are a number of groups studying in unique training programs, including the REGEV¹⁵ Outstanding Student Teacher Education Program. Key criteria for acceptance into the program include high cognitive (psychometric exam) and academic (matriculation exam) abilities, and high motivation for engaging in education and teaching. The students' high abilities must also gain expression during their studies: progression from one year to the next in the program is also conditional upon particularly high passing grades (average grade 90) in an accelerated program, and very successfully fulfilling additional challenging tasks and activities, such as expanded practical teaching experiences, preparing conferences and seminars in the colleges, and involvement in the community, such as helping underprivileged children. These are undoubtedly students from whom proof of excellence is demanded both when entering the program (meeting criteria of cognitive, academic, social, and personal excellence) and in the course of their teacher training (very successfully meeting academic and practical challenges as a condition for completing the program). It is therefore possible that if our hypothesis concerning the influence of these teachers' high personal abilities on their resilience to external pressures and circumstances, e.g., school climate, is correct, this will be manifested in teachers who are Excellence Program graduates (for more on the REGEV

¹⁵ REGEV is the name of "The Excellence/ Outstanding Student Teacher Education Program" [Hebrew acronym describing a highly motivated student with high abilities and a desire to influence others].

Program, see: Ariav, Maskit, & Klavir, 2014; Klavir & Goldenberg, 2014; Shayshon & Popper-Giveon, 2016). Accordingly, we defined two research hypotheses:

First hypothesis: A positive correlation will be found between school climate and classroom climate among teachers who are graduates from traditional programs; however, this correlation will be weaker among Excellence Program graduates.

Second hypothesis: A positive correlation will be found between school climate and teaching quality among teachers who are graduates from traditional programs; however, this correlation will be weaker among Excellence Program graduates.

Methodology

Sampling and participants

The present study was conducted as an online study in which questionnaires were emailed to a sample of 3062 graduates from teacher education colleges who graduated between 2008 and 2011 and belong to two groups: 1691 Excellence Program graduates, and 1371 graduates from traditional teacher education programs. A reminder was sent about two weeks later. The completed questionnaires were automatically added to an Excel file without the respondent's identifying details. 470 completed questionnaires were received: 272 (16%) Excellence Program graduates, and 198 (14%) graduates from traditional programs.

The respondents from both groups were predominantly women, constituting over 80% of each group. No significant differences in responses were evident between men and women.

The teachers in the sample graduated in 2008 (19%), 2009 (23%), 2010 (28%), and 2011 (30%). Their average seniority in teaching at the time of completing the questionnaire was 2.94 years, with a standard deviation of 1.61.

Research tool

The research tool was an anonymous self-reporting online questionnaire. Based on the background from the literature on the terms examined in the present study, a series of statements were defined that meet the theoretical description of the terms: school climate, classroom climate, and teaching quality. These items were structured in consultation with content experts and educators, including senior lecturers in several teacher education colleges.

Based on these items, the statements were incorporated into the research questionnaire, which included background variables. The questionnaire comprised 102 questions, most of them on a Likert scale in which answers ranged from 1=not at all, to 5=to a very high degree. Based on the responses obtained in its empirical examination, factor analysis of the questions was carried out. From all the questions (some of which are not relevant to the present study and are being used for other studies) a number of measures were defined for examining the three variables: school climate; classroom climate; and teaching quality in the present study. An overall factor score was calculated for each variable, as well as individual sub-scores for the components comprising each variable. The internal reliability and construct validity of these scores were computed.

- School climate: The teacher's subjective evaluation of five measures: school staff cohesion; encouraging initiatives and professional collaborations; eradicating violence; condition and accessibility of school supplies and teaching aids; and the degree to which the school strives to academic excellence. Cronbach's alpha reliability for this factor was 0.79, with a mean of 3.85, and a standard deviation of 0.629.
- Classroom climate: The teacher's subjective evaluation of six measures: the students' support for each other; the teacher leads by personal example; the teacher treats all students equally; the teacher encourages volunteering; the students' ability to express an independent opinion; and there is a supportive and meaningful teacher for the students. Cronbach's alpha reliability for this factor was 0.70, with a mean of 4.12, and a standard deviation of 0.423.

Teaching quality: The teacher's subjective evaluation of seven measures: advancing initiatives and change processes in the classroom and school; planning short- and long-term teaching and evaluation processes; promoting academic achievements; keeping abreast with and implementing innovative and diverse teaching methods; investing in homework; participating in relevant courses and advanced studies on teaching methods and the relevant discipline; and promoting additional (non-academic) student achievements. Cronbach's alpha reliability for this factor was 0.77, with a mean of 3.60, and a standard deviation of 0.572.

It is important to bear in mind that each of these variables constitutes a perceived value (e.g., perceived teaching quality) rather than a subjective value since it is based on the respondents' (teachers) self-reporting.

Findings

As explained in the Tool section, the questionnaire administered to the teachers comprised questions that were divided into three distinct factors: school climate, classroom climate, and teaching quality.

1. Correlation between school climate and classroom climate

The first research hypothesis posited that a positive correlation would be found between school climate and classroom climate among teachers who graduated from traditional programs, and this correlation would be weaker among Excellence Program graduates.

To examine this hypothesis, correlations between the overall factor scores of *school climate* and *classroom climate* in the two groups of graduates were calculated. In a Z-test for differences between correlations, a significant difference was found ($p < 0.05$) in this correlation among graduates from traditional programs ($r = 0.38$), which was higher than the correlation among Excellence Program graduates ($r = 0.21$). This difference between the correlations indicates that among graduates from traditional programs classroom climate is related to school climate to a greater degree than among Excellence Program graduates, where this relationship is weaker.

2. Connection between school climate and teaching quality

The second research hypothesis posited that a positive correlation would be found between school climate and teaching quality among teachers who graduated from traditional programs, and this correlation would be weaker among Excellence Program graduates.

This hypothesis was examined by calculating the correlations between the overall factor scores of *school climate* and *teaching quality* among graduates from traditional training programs and Excellence Program graduates. In a Z-test for differences between correlations a statistically significant difference was found ($p < 0.001$) in this correlation between graduates from traditional programs ($r = 0.37$) and Excellence Program graduates ($r = 0.07$). This difference between the correlations indicates that among graduates from traditional programs school climate is significantly related to teaching quality, in contrast with Excellence Program graduates where no correlation was found between the two variables.

To clarify these findings and attempt to find the source of the differences, Table 1 shows the correlations between the overall factor scores of *school climate* and *teaching quality* and the individual sub-scores for the components comprising each of these variables in both groups.

Table 1: Pearson correlation coefficients between the overall factor scores of *school climate* and *teaching quality* and the individual sub-scores for the components comprising each of these variables in both groups of graduates

		School Climate overall factor score		Teaching Quality overall factor score		Significance of difference
		Graduates From traditional programs	Excellence Program graduates	Graduates from traditional programs	Excellence Program graduates	
A. Sub-scores Of School climate	1. School staff cohesion			.20**	-.05	**
	2. Encouraging initiatives and professional collaborations			.34**	.12*	**
	3. Eradicating violence			.21**	.07	
	• Condition and accessibility of school supplies and teaching aids			.33**	.04	**
	• Degree to which the school strives to academic excellence			.38**	.24**	*
B. Sub-scores Of Teaching quality	1. Advancing initiatives and change processes in the classroom and school	.32**	.10			**
	2. Planning short- and long-term teaching and evaluation processes	.29**	-.05			**
	3. Promoting academic achievements	.22**	.11			
	4. Keeping abreast with and implementing innovative and diverse teaching methods	.22**	.05			*
	5. Investment in homework	.25**	.09			*
	• Participation in relevant courses and advanced studies on teaching methods and the relevant discipline	.14	-.08			**
	• Students' achievements	.11	.01			

* $p < 0.05$

** $p < 0.01$

Table 1 shows the correlations between the statements comprising the overall *teaching quality* factor score and the *school climate* sub-scores, as well as the statements comprising the overall *school climate* factor score and the *teaching quality* sub-scores in both groups. The

correlations indicate that among graduates from traditional programs all the *school climate* sub-scores have medium strength significant positive correlations with the overall *teaching quality* factor score (the correlations range from 0.20 to 0.38). In contrast, among Excellence Program graduates no correlations or weak correlations with the overall *teaching quality* factor score were found in most of the *school climate* sub-scores (the correlations range from -0.05 to 0.24). The difference between the correlations was statistically significant with regard to four of the five statements (for statements A1, A2, and A4 $p < 0.01$, and for statement A5 $p < 0.05$).

With regard to the correlations between the statements comprising the *teaching quality* sub-scores and the overall *school climate* factor score it emerges that most of the statements are positively connected to school climate among graduates from traditional training programs. In contrast, and across the board, it was found that among Excellence Program graduates none of the *teaching quality* sub-score statements are connected to the overall *school climate* factor score. Examination of the differences between the correlations shows statistically significant differences between the groups with regard to five of the seven statements (for statements B1, B2, and B6 $p < 0.01$, and for statements B4 and B5 $p < 0.05$).

These findings corroborate the present study's second hypothesis whereby a correlation will be found between school climate and teaching quality among graduates from traditional training programs, but this correlation will become more moderate and even disappear among Excellence Program graduates. In the discussion and conclusions section we shall attempt to explain this absence of correlations on the basis of the components of the Excellence Program and the characteristics of its graduates.

Discussion and Conclusions

The present study focused on the connection between school climate and two variables: classroom climate and the teacher's teaching quality. Although in the literature this kind of connection has been found between school climate and the two other variables, this study focused on the question of whether there is a teacher population for whom these connections function differently or at a different strength.

We hypothesized that unlike a traditional teacher population, among Excellence Program graduates the influence of school climate will be weaker and will not influence either classroom climate or teaching quality. The findings corroborated both hypotheses.

As presented in the Introduction to this article and based on broad empirical findings, the researchers hypothesized that due to their high abilities and their constant belief in these abilities, teachers who are Excellence Program graduates are likely to be resilient to external influences such as those manifested in school climate. The findings do corroborate this hypothesis; however, in light of these findings, the question is whether this is solely due to their high abilities. Perhaps, as Rinn (2007; Rinn et al., 2014) found, there is also "something" in the very association with a prestigious program such as the Excellence Program that augments the students' sense of efficacy and recognition of their self-worth, which can reinforce their resilience to various external pressures, such as manifested in the school climate. As previous studies on graduates have found (e.g., Klavir & Goldenberg, 2014), there is no doubt that the very fact of this association carries prestige and importance in the graduates' eyes. This reinforces their sense of efficacy and their commitment to excellent educational endeavour as well as their ability to achieve it. It is therefore possible that these factors (which derive from the very fact of belonging to the Excellence Program) combine with the Excellence Program graduates' high sense of resilience to external influences in the school, although this was not examined in the present study. Finally, an additional possible factor that joins the previous two and contributes to the teachers' ability to withstand external conditions, such as those manifested in the present study on school climate, is resilience. Resilience is a concept that in the past was used in developmental psychology and psychiatry to describe the individual's ability to recover from a difficult or traumatic situation (Block & Block, 1980). In recent decades studies on resilience have shifted from investigating the individual's coping skills and difficulties to positive characteristics, namely the strengths that aid the

individual's good adaptability and successful transitions in the individual's life (Henderson & Milstein, 2003).

It is therefore possible that there is something that typifies the character of the training the students received in the Excellence Program that coupled with their high abilities and sense of efficacy contribute to the picture emerging in the present study. On the one hand, as described above, this is an accelerated, demanding, and challenging program, and meeting its conditions mandates high abilities and resilience to time pressures and academic, professional, and personal demands. On the other hand, it is possible that the program, which openly conveys to the students in every possible way that they are expected to become high-quality teachers and should strive for excellence in teaching, strengthens them and contributes to their resilience to external pressures. This hypothesis stems from the fact that the program encourages the students participating in it to become teachers who change the environment by means of initiatives and innovation with the aim of achieving the goal of quality and excellence in teaching. It may be that the program's ethos, which is conveyed to the students, reinforces the resilience of its graduates as teachers to external pressures. A possible intimation of the veracity of this explanation can be drawn from previous studies on graduates such as that conducted by Klavir, Cohen, and Grienfeld (2009a), which engaged in the feelings expressed by Excellence Program graduates in their descriptions of it. In their summary of the graduates' words in that study, the researchers write:

The very fact of being accepted to the program, belonging to an elite group, the high expectations from the students as learners in the present and excellent teachers in the future, as well as successfully meeting the program's numerous demands and difficult challenges – all these have made excellence [in the eyes of the graduates] not only a brand name that is mentioned as an empowering component in itself, but also a component possessing a Pygmalion effect: high expectations, the system's belief in their ability to meet these expectations, and the efforts they invested in meeting them, all came together and led the graduates to high achievements on personal and professional levels alike (p. 483).

Emerging from this study is that there is indeed a connection between school climate and classroom climate and between school climate and teaching quality. The veracity of this finding has been confirmed with regards to teachers in the education system in general. However, among Excellence Program graduates these connections are weaker, and they have been found to be less influenced by the external climate around them. This resilience joins not only their high abilities, but also the expectations from them, their own expectations, and the character of the programs in which they received their teacher training, which possibly reinforces and contributes to their resilience and firm insistence on their vision, and gives them the strength to continue striving to fulfill their aspirations to be excellent teachers.

As one graduate (KV) who participated in a previous study (Klavir, Cohen, & Grienfeld, 2009b, pp. 441-442) related after a year of working as a teacher in a school:

I feel that the program contributed to me. I have the ability to come to a coordinating role [...] to be a teacher that is more active than the usual [...] to form connections with other teachers [...] to build a unique and personal program for each one. I got that from the program. we received a systemic perspective. I think that's what helped me, enabled me to feel the system [...] to advance my outlook. We learned how to lead changes and that enabled me to feel competent [...] that I can. Altogether, the program worked on what we are capable of [...] And there were expectations from us and you feel that there are expectations from you so you do difficult things and succeed [...] And this confidence that you're successful gives you the confidence to continue, and enables me at least! All these things gave me strength [...] to feel that it's possible [...] that I am capable of leading forward.

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About the Authors

Dr. Judy Goldenberg is a senior lecturer at the Talpiot Academic College of Education, and a researcher at The Mofet Institute in Tel-Aviv. Her research interests and publications are in the areas of evaluating educational programs, selection and assessment of manpower. Judy has a Ph.D. in Psychology from Bar Ilan University, and is a licensed Instructor-Specialist for the council of social-organizational psychology in the Israeli Department of Health.

Dr. Rama Klavir, *Ph.D.*, in education from Ben-Gurion University in Be'er-Sheva, Israel. Among her many research interest: Thinking and learning, giftedness, creativity and excellence in schools and within the framework of teacher's training. She has published 3 books and many studies on these topics. One of the founders of the REGEV program for training excellent students for education, and was in charge of the program on behalf of the department of training education staff in the ministry of education of Israel (2008-2017). Today is Head of The School of Professional Development at The Mofet Institute in Tel Aviv, Israel and a senior lecturer at the Talpiot Academic College of Education

Addresses

Dr. Judy Goldenberg

The Talpiot Academic College of Education, Holon, 5850018, Israel.

e-Mail: judyg@zahav.net.il

Dr. Rama Klavir

Head of The School of Professional Development; The Mofet Institute, Tel Aviv 61484, Israel.

The Talpiot Academic College of Education, Holon, 5850018, Israel.

e-Mail: rama_k@macam.ac.il