

Fall 2015

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Efrat Kass

Erez Miller

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### Recommended Citation

Kass, Efrat and Miller, Erez (2015) "Teacher-Education Programs & Teacher Trainees` Sense of Professional Efficacy," *Journal of Pedagogy, Pluralism, and Practice*: Vol. 7 : Iss. 1 , Article 8.

Available at: <https://digitalcommons.lesley.edu/jppp/vol7/iss1/8>

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## Teacher-Education Programs & Teacher Trainees' Sense of Professional Efficacy

Efrat Kass

Achva Academic College

Erez Miler

Achva Academic College

## Abstract

Teachers' sense of self-efficacy (SSE) is strongly related to the quality of teachers and their teaching. Thus, it is important to determine whether teacher education programs enhance the SSE of teacher trainees. This article assesses teachers' SSE based on two spheres: classroom and organization. The study explored three questions: (a) Is there a change in classroom efficacy over the course of four years of training? (b) Is there a change in organizational efficacy over the course of four years of training? (c) Is there a difference between classroom efficacy and organizational efficacy at the end of each year of teacher training program and over the course of four years of training? The participants were 136 teacher trainees (freshmen to seniors) at a teachers college, who completed a self-report scale. The results indicated that there was no significant increase in classroom efficacy or in organizational efficacy from the first to the fourth year of teacher training.

In each academic year, organizational efficacy was significantly lower than classroom efficacy.

*Keywords:* Teacher education program; Teachers' classroom self-efficacy; Teachers' organizational self-efficacy

Teacher-Education Programs & Teacher Trainees' Sense of Professional Efficacy  
(Brief intro. needed here.)

### **The Definition of Self-efficacy and its Importance to Teacher Education**

The concept of self-efficacy illuminates a very important component in teachers' abilities to function and often distinguishes successful teachers from less successful teachers (Jablonski, 1995; Plourde, 2002; Raudenbush, Rowan, & Cheong 1992; Tschannen-Moran & Woolfolk-Hoy, 2007). The concept of "self-efficacy" denotes individuals' capacity to evaluate their own ability to carry out certain behaviors in pursuit of their goals (Bandura, 1997, 2006). Self-efficacy is a critical component in teachers' thinking about their own personal and professional capabilities. Research on teachers' self-efficacy spans more than three decades and has elicited various definitions. For example, Bandura's definition (1997) defined teachers' efficacy as depending on more than their ability to teach subject matter, and is partially determined by their efficacy beliefs in maintaining classroom discipline that establishes an environment of learning, in using resources, and in supporting parental efforts to help their children learn. Other researchers defined the teacher's self efficacy as the perception of his or her own competence and the ability of teaching, as a professional discipline, to shape students' knowledge, values and behavior, or (Armor, Conroy, Cox, King, McDonnel, Paskal, Pauly & Zellman, 1976; Cole, 1995; Evans & Tribble, 1986; Gibson & Dembo, 1984; Guskey & Passaro, 1994; Imants & Tillema, 1995; Ross, 1994; Tschannen-Moran & Hoy, 2001).

Pre-service teacher education has been identified as a major factor that impacts teachers' overall self-efficacy (Soodak, Podell & Lehman, 1998; Paneque & Barbetta, 2006). Kagan (1992) believed that by arriving at an understanding of how self-efficacy is formed we may "[understand] how good teachers are made" (p. 85). This

understanding will help teacher educators create quality teacher education programs that provide teacher trainees with the knowledge, skills and commitment to teaching as a long-term career regardless of their certification route. A higher sense of self-efficacy may also reduce burnout among teachers (Friedman, 2003), which in turn may reduce high rates of teacher turnover, increase teacher wellness and satisfaction, and may predict changes in child social and academic adjustment (e.g., Hoglund, Klinge & Hosan, 2015).

Many researchers have identified changes in teachers' SSE from the time they first enter their teacher-training programs to the conclusion of their training and their official induction year (Enochs, Riggs & Ellis, 1993; Guyton, 1991; Housego, 1992; Prieto & Altmaier, 1994; Woolfolk & Spero, 2005). Postareff, Lindblom-Yianne, and Nevgi (2007) found that self-efficacy beliefs change slowly and that it takes at least one year of training for positive effects to emerge. This is supported in the work of Gilat, Kupferberg and Sagi (2007), who found that the SSE scores of 246 teacher trainees were significantly higher in the fourth year of training than in the first year, suggesting that teacher trainees' professional SSE increased during their years of training. An increased sense of self efficacy is vital to the success of novice teachers. Therefore, it is crucial that teacher training programs will include theoretical and practical components that would help teachers in training to develop their professional SSE. These components are discussed henceforth.

### **Recommended Components of Effective Teacher Education Programs**

Some researchers emphasize the importance of teacher educators' awareness of their students'/teacher trainees' beliefs. Enoch and Riggs (1993) state that this awareness should guide these teachers in planning experiences that will have a positive influence on their trainees' SSE and their expectations for the outcomes of

their training programs. Newton, Leonard, Evans and Eastburn (2012) found that content knowledge mediated by prior learning experiences was positively related to teaching efficacy among pre-service elementary teachers. Wilson (1996) suggests five elements in teacher education that may enhance SSE in teaching science, mathematics, and technology, including field experience in the teacher trainees' subject specialty, clarification of trainees' tasks and aims, case analyses and working in small groups.

Since some studies found that it is more difficult to modify the SSE of experienced teachers than that of trainees and novice teachers (Anderson et al., 1988; Capron, 1989), it seems critical to enhance teachers' SSE as early as possible in their professional development. However, some teacher trainees begin their training with the burden of prior negative learning experiences of the subject matter in their specialty (usually in high school). These experiences may create negative self-statements and cognitive misinterpretations, which may affect their personal self-efficacy in their chosen teaching specialty (Watters & Ginns, 1995). Thus, effective teacher training programs should help these teachers in training change their negative statements into positive ones and to correct misinterpretations about learning and teaching this subject matter, thus enhancing their teaching SSE. We believe that this change would be more effective through processes of mentorship and supervision coupled with field experiences.

### **Teacher Classroom Efficacy and Organizational Efficacy**

In this study, we use the definition of Friedman and Kass (2002), which is based on the importance of distinguishing between classroom efficacy and organizational efficacy: "Teacher self-efficacy is the teacher's perception of his or her ability to (a) perform tasks and to regulate relations involved in the process of teaching and

educating students (efficacy in the classroom sphere), and (b) perform organizational tasks and become part of the organization and its political and social processes (efficacy in the organizational sphere)” (p. 21). Friedman and Kass (2002) suggested that in both spheres, the teacher has to perform professional tasks and be involved in interpersonal relationships. It was found that teachers’ classroom SSE is higher, on average, than their organizational SSE.

Regarding the classroom sphere, the teacher facilitates learning, functions as an educator who teaches values and facilitates social and emotional personal and group processes, and handles both formal and informal aspects of relationships with the students. This context includes quality teaching, effective classroom management, and generating cognitive, moral and social growth in their students. This is achieved by dealing effectively and confidently with challenges in the classroom, such as discipline problems, classroom disruptions, and maintaining clear student–teacher boundaries. Friedman and Kass (2005) characterized teachers who have a very high classroom efficacy (HCE) and a high organizational efficacy (HOE). Teachers with HCE set high academic standards, exhibit confidence, create a climate of acceptance, are receptive, and relate to pupils’ special needs. In addition, these teachers set clearer, higher, and more challenging goals for themselves and their pupils than other teachers do; they assume responsibility for their pupils’ achievements and provide different kinds of feedback as circumstances demand. Furthermore, they believe in their pupils’ abilities to learn, thereby supporting and strengthening students’ confidence in their abilities to do so. Finally, such teachers are very more likely to bring their students to higher achievements effective in class (Caprara, Barbaranelli, Borgogni & Steca, 2003; Kass and Friedman, 2005; Tschannen-Moran & Woolfolk Hoy, 2007; Tournaki & Podell, 2005).

In the organizational sphere, the teacher may seek influence and active involvement in performing organizational tasks (e.g., involvement in decision making, membership in “inner circles,” confidence in navigating the organizational maze, ascending the school hierarchy), establishing positive relations with colleagues and members of the administration, and coping with the school’s administration demands.

Friedman (2004) suggests that the organizational sphere includes all the rules and norms that characterize any organization. Moreover, the school as an organization has its unique organizational culture and environmental climate. Therefore, each teacher trainee should have the organizational knowledge that would enable effective functioning within the school, contributing to the organization, benefiting from the organization's strength, and being promoted within the organization. Thus, the teacher trainee should have “organizational literacy” (i.e., the ability to utilize the school’s resources to achieve personal goals or ideals).

Teachers with HOE support parents’ efforts to help their children learn, place less emphasis on the parent-pupil relationship as a source of stress, are willing to be observed by other teachers during lessons, are open to innovations and experiments, are willing to confront challenging teaching problems, and believe in their own abilities to influence school policy and decision making (Geijsel et al., 2009).

In our opinion, knowledge of this kind of literacy is a prerequisite for teacher trainees’ organizational efficacy. In the present study we examine whether teacher training programs indeed provide trainees with this organizational knowledge. Developing a high sense of organizational efficacy is important to teachers’ functioning and effectiveness. Thus, we wanted to examine the literature on cultivating teacher trainee SSE in the organizational sphere. However, our



comprehensive search for such studies yielded no reference to organizational aspects in teacher education programs. In addition, we examined whether teacher training programs in Israel include components that refer to the organizational sphere or organizational literacy.

### **Teacher Training Programs in Colleges in Israel**

There are 23 academic teacher training colleges of education in Israel. These colleges are officially under the auspices of the Council for Higher Education, although they are funded and supervised by the Ministry of Education, which requires the same general components in all secular teacher education programs in teacher training colleges across the country. Training programs in these colleges is aimed at developing preschool, elementary, and middle school teachers, and most of the students complete their training and receive their B.Ed. degree in four years. Teacher-training colleges invest substantial efforts in developing programs that will correspond to the changes taking place in this field and in helping teacher trainees acquire relevant knowledge and skills.

Most of the programs include the following components: General courses in education (e.g., philosophy of education, sociology of education), psychology (e.g., developmental psychology), research methods, computer literacy, disciplinary studies (i.e., clusters of courses in a teaching specialty, such as literature), field experience (observing and teaching in educational settings), and teaching methods (e.g., coping with discipline challenges in the classroom; learning strategies).

We examined the structure of ten general teacher education programs in leading teacher education colleges in Israel for the academic year of 2012-2013, using their formal websites. Four colleges did not provide any detailed information on general education courses offered through their programs. Five colleges did not offer any

courses that focus on organizational aspects. Only one college offered three courses that focused on organizational aspects of education and teaching (sociological and organizational aspects in education, trends in educational policy, and introduction to educational systems management). The training program, in which the present study was conducted, included a few courses in classroom management.

In addition, we found that there was little reference to organizational aspects in leading teacher training programs in Israel. This led us to the present study which aimed at exploring the development of classroom efficacy vs. organizational efficacy as a case study in one teacher training college. In brief, we defined what self-efficacy is and its importance for the development of quality teaching practices among teachers, in both the classroom and organizational spheres. Although developing self-efficacy should be an integral component of teacher education programs, the literature on organizational aspects of self-efficacy of teachers is scarce. However, the research literature on teacher education supports the argument that that trainees' SSE undergoes considerable changes over their course of studies (Gilat, Kupferberg & Sagi 2007; Gorell & Hwang, 1995; Housego, 1992; Ross, 1995; Woolfolk, Rosoff & Hoy, 1990).

The present study was guided by the following research questions and hypotheses:

1. Is there a change in classroom efficacy over the course of four years of training?

*Hypothesis:* There will be a significant increase in teacher trainees' classroom efficacy over the course of four years of training.

2. Is there a change in organizational efficacy over the course of four years of training?

*Hypothesis:* There will be no significant increase in teacher trainees' organizational efficacy over the course of four years of training.

3. Is there a difference between classroom efficacy and organizational efficacy at the end of each year of teacher training program and over the course of four years of training?

*Hypothesis:* The teacher trainees' average classroom efficacy scores will be higher than organizational efficacy scores in each year of the program and over the course of four years of training.

### **Methodology**

The study utilized a cross-sectional research design. As such, it examined the changes of classroom and organizational efficacy by comparing groups of freshmen, sophomores, juniors, and seniors. It also examined the longitudinal development of classroom and organizational efficacy from the beginning to the end of students' four years of training.

### **Sample**

One hundred forty-nine (149) teacher trainees in eight classes (two classes in each year of a four-year teacher education program) at an academic teachers' college were tested simultaneously. The teacher education program is guided and supervised by the Israeli Ministry of Education. The program consists of general courses in education, classes focused on pedagogy, field experiences, and teaching specialty courses. The TSE scale was administered to each class twice: at the beginning and at the end of the academic year.

Twenty-eight percent of the students were freshmen, 26% were sophomores, 28% were juniors, and 18 % were seniors. Ninety-four percent were women and 6% were

men. Their ages ranged from 18 to 26 years; most (73.8%) belonged to the 21 to 26-year-old cohort.

### **Instrument**

Teacher trainees' sense of teaching efficacy was measured by means of the Teacher Self-Efficacy (TSE) scale, which is used mainly to measure teachers' self-efficacy. The scale was adjusted to include two spheres: classroom and organizational. The scale consists of 29 self-reporting statements, based on a six-point Likert scale (ranging from "always" to "never"). The participants also filled in several items referring to personal and professional background.

### **Original Psychometric Data of the Teacher Self-Efficacy (TSE) Scale**

Two factors in the scale accounted for 34% of the total variance of the scale: the organizational-sphere factor at 8.6% and the classroom-sphere factor at 25.4%. The Pearson correlation between the two factors was  $r=.34$ . The internal consistency of the entire scale, assessed by means of Cronbach's alpha coefficient, was  $\alpha=.90$ . The internal consistency of the organizational-sphere factor was  $\alpha=.89$  and that of the classroom-sphere factor was  $\alpha=.87$ .

### **Variables**

For the purposes of this study, the dependent variables relating to teacher trainees' teaching efficacy was comprised of two factors – the classroom sphere and the organizational sphere. Independent variables pertained to the time of year in which the participants were engaged in their respective teacher education programs – beginning or end of the academic year, and their current year of study at the time of participation (first, second, third, or fourth).

## **Procedure**

The TSE scale was distributed to the teacher trainees after the authors received approval from the institutional review board. The scale was distributed twice: at the beginning of the year and at the end. The participants completed the scale during their teaching methods class. They were asked to complete the scale anonymously and were apprised of their rights and the ethical aspects of the study. They were told that the goal of the study was to find ways to improve teacher education.

## **Data Analyses**

To process the data, the following tests were used:

1. To test the difference in classroom efficacy scores between the beginning (mean score of first year) and the end of training (mean score of fourth year), a paired two-tailed t-test was performed (see Table 1).
2. To test the difference in organizational efficacy scores between the beginning (mean score of first year) and the end of training (mean score of fourth year), a paired two-tailed t-test was performed (see Table 1).
3. To test the relation between the independent variable (year of teacher education program) and the dependent variable (SSE in the classroom sphere vs. the organizational sphere) a multiple variance analysis (MANOVA) test was performed (see Table 2).

## **Results**

### **Classroom and Organizational Spheres**

Initially, we tested for difference in mean classroom efficacy scores between freshmen ( $M=4.425$ ,  $SD=0.584$ ,  $N=39$ ) and seniors ( $M=4.645$ ,  $SD=0.396$ ,  $N=19$ ). The result of the two-tailed t-test was 1.687, not significant at the  $p \leq .05$ ,  $df=56$ . It means that since there was no significant difference at the entry level scores between

the two groups, there was no significant increase in the classroom efficacy mean score from the first to the fourth year of training.

Next, we tested for difference in mean organizational efficacy scores between freshmen ( $M=3.359$ ,  $SD=1.157$ ,  $N=39$ ) and seniors ( $M=3.551$ ,  $SD=0.835$ ,  $N=19$ ). The result of the two-tailed t-test was 0.721, not significant at the  $p \leq .05$ ,  $df=56$ . It means that since there was no significant difference at the entry level scores between the two groups, there was no significant increase in the organizational efficacy mean score from the first to the fourth year of training.

Table 1.

*Comparisons of change from the beginning to the end of training: classroom and organizational efficacy*

Academic year	Classroom sphere			Organizational sphere		
	N	M	SD	N	M	SD
First	39	4.425	0.584	39	3.359	1.157
Fourth	19	4.645	0.396	19	3.551	0.835

### **Relationship Between Teacher Trainees' Academic Year and Sense of Self-efficacy in Classroom and Organizational Spheres.**

To examine the relation between the combined dependent variable (classroom efficacy and organizational efficacy) and the independent variable (academic year), we performed a MANOVA test. The contribution of the academic year to the explanation of differences in the efficacy level borders on significance ( $p=0.054$ ), meaning that the trainees' SSE changed from one year to the next or over the course of their four years of the teacher education program, but this change did not reach the required level of statistical significance.

### Comparison of SSE Scores Between Classroom and Organizational Spheres

It is the organizational sphere that explains the difference between academic years. In each academic year, organizational efficacy was significantly lower than classroom efficacy ( $F(3,114)=3.59$ ,  $p<.01$ ,  $\eta^2=.09$ ). However, the standard deviation (SD) of the organizational sphere was more than twice as large as that of the classroom sphere, meaning that the trainees showed more variation in the organizational sphere.

Table 2

*Comparison of efficacy scores in the classroom and organizational spheres*

Academic year	Classroom sphere			Organizational sphere		
	N	M	SD	N	M	SD
First	39	4.425	0.584	39	3.359	1.157
Second	28	4.457	0.572	28	2.902	1.151
Third	32	4.440	0.435	32	2.718	0.986
Fourth	19	4.645	0.396	19	3.551	0.835
Sample at large	118	4.472	0.516	118	3.107	1.100

### Discussion

The purpose of this study was to examine the development of teacher trainees' SSE during their four years in the teacher education program. The effect of SSE on the quality of teaching, and its contribution to lower levels of attrition from the teaching profession and to higher student achievements, continues to be widely reported in the literature. Thus, it is important to determine whether teacher education programs contribute to future teachers' SSE, which consists of both classroom and

organizational spheres. In this section, we discuss the findings of our research in reference to each of the three hypotheses.

Our first research hypothesis was that classroom efficacy would significantly increase from the first to the fourth year of teacher training. Contrary to our expectation (which was based on the literature, e.g. Woolfolk & Spero, 2005; Gilat et al., 2007), the change in classroom SE was not statistically significant over the four-year program. This finding was surprising, since the training program included (albeit limited) theoretical courses that should have facilitated the improvement of the students' sense of classroom efficacy. We suggest that it is possible that teacher educators are not sufficiently aware of the importance of developing the trainees' sense of classroom efficacy. This aspect is not a core issue in many programs, and was not reflected in most of the teaching or pedagogical courses in the program examined in the present study. Indeed, providing knowledge and information is not sufficient when it comes to self-efficacy – it requires ongoing facilitation of learning and reflection by teacher educators and field supervisors to develop it most fully in teacher trainees.

Another explanation could be that the more experience the trainees gain in the field, the more they become aware of the complexities of their profession, which in turn hinders the development of their classroom efficacy. The theory of self-efficacy suggests that if a task is perceived as threatening, the higher the sense of self-efficacy required to cope with it (Bandura, 1997).

Our second research hypothesis was that organizational efficacy would not increase significantly from the first to the fourth year of teacher training, since the teacher training program examined in the present study (both at the theoretical and practical levels) included very few organizational aspects. As we expected, based



on an examination of leading teacher training programs in Israel, the change in organizational SE was not statistically significant over the four-year programs. This finding is worrying, since teachers are expected to function as organizational people at their schools, while it seems that most leading teacher training programs in Israel do not provide their students with sufficient knowledge of how to function effectively as contributing members in their schools. Determining which types of theoretical courses and effective pre-service field experiences are sufficient for developing a sense of organizational efficacy would require future empirical examination.

Our third research hypothesis was that teacher trainees' SSE in the classroom sphere would be significantly higher than their SSE in the organizational sphere. The results of our MANOVA test supported this hypothesis – SSE scores were significantly higher in the classroom sphere than in the organizational sphere in each academic year and over the course of training (from the first to the fourth year). This finding was not surprising in view of the nature of teacher trainees' field experience. While classroom efficacy did not change significantly over the course of four years of training, most of the field experience was, nevertheless, in classroom teaching, with limited exposure to and experience with organizational roles and dynamics. Trainees' experience with the school as an organization usually begins after they enter the school as certified teachers.

Traditionally in Israel, training teachers focuses mainly on teaching competencies (i.e., the classroom sphere). The broader definition of teacher efficacy (Kass & Friedman, 2005), which includes classroom and organizational spheres, stresses the importance of training teachers in the following areas: (a) the relations between teachers, their colleagues and their principal; and (b) the perception of the teacher as

an “organizational person,” possessing the necessary skills to function within an organization. Thus, it is critical to enhance teacher trainees’ sense of organizational efficacy during their education. This may be achieved, for example, by asking them to interview members of school management about their responsibilities, by giving them responsibility for minor school-wide activities, enabling access to teacher-parent conferences, and other experiences in which they gain a concrete understanding of the organizational structures that function within a school building, district, and broader community. Such experience may enhance the development of organizational self-efficacy and allow trainees to enter the teaching profession feeling sufficiently competent to undertake specific school responsibilities, large and small (e.g., initiation of projects and processes).

Additionally, the literature suggests a correlation (especially among science and computer teachers) between experiences as pupils and a subsequent sense of professional efficacy as teachers (Ramey-Gassert & Shroyer, 1992; Watters, 1994). Thus, another possible explanation for our finding lies in these teacher trainees’ earlier experience in the educational system as high school students. If these trainees had more opportunities to engage actively in school-wide activities while in high school, they might have had a stronger sense of organizational efficacy as teacher trainees. A stronger sense of organizational efficacy in their youth can be more easily maintained and further developed during teacher training. Furthermore, since teachers’ organizational SSE is negatively correlated with teacher burnout (Friedman, 2003), a possible implication of this finding is that organizational efficacy may be a better predictor of teacher burnout and attrition than classroom efficacy.

### **Limitations of the Present Study**

The present study has two major limitations that should be borne in mind:

First, the design of the present study was cross-sectional. While it examined the development of SSE of each group at two points in time, it did not investigate any group's SSE development throughout the four years of their teacher training program. Second, although the sample was large enough for our statistical analyses, the participants were recruited from only one teacher training college. In future research, we would attempt to broaden the range of participants to include students from other institutions, yet since Israeli teacher education programs are coordinated nationally through the Ministry of Education, our current findings may be applicable to other teacher education programs.

### **Summary and Implications**

In view of the findings of this study, which indicate that teacher trainees' classroom and organizational efficacy do not improve from the beginning of the training to the end, future research should examine more specific factors that affect teacher trainees' professional efficacy, both in the classroom and the organizational domains. There is a need to find out how different teacher training models and field experiences, teaching supervision, classroom methods, and additional academic components of the training program contribute separately to the development of the sense of self-efficacy.

Another valuable area of research should examine novice teachers' organizational efficacy as they enter the field, and again several years later, as well as an examination of the relationship between teachers' organizational efficacy and professional burnout and attrition. Such research projects could compare teacher education programs that place greater emphasis on the development of organizational efficacy with those that emphasize classroom efficacy.

In summary, teacher self-efficacy was found as an essential component of high quality teaching. Therefore, teacher training program must include components that have been found as increasing teachers in training classroom and organizational efficacy.

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