# Efficacy Beliefs, Background Variables, and Differentiated Instruction of Israeli Prospective Teachers

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ABSTRACT In this study, the authors examined efficacy beliefs and choices of differentiated instructional strategies needed for effective teaching in inclusive classrooms. Participants included 191 Israeli prospective teachers. They responded to a modified form of the Teacher Efficacy Scale (Gibson & Dembo, 1984) and a 59-item instructional strategies scale. Findings revealed that the Personal Teaching Efficacy factor (PTE) was related to choices of instruction, but the Teaching Efficacy factor (TE) was not. Prospective teachers focusing on junior high education obtained the highest PTE scores compared with those focusing on early childhood and elementary education, and participants focusing on early childhood education obtained the highest TE scores. Participants expressed intent to make adaptations directed toward all students and less willingness to use differentiated instruction.

Key words: differentiated instruction, inclusion, preservice teachers, self-efficacy

s school systems throughout the world prepare for the A 21st century, they face many new challenges. One of the ongoing challenges is related to changes in the size and in the composition of the student school population. For example, Csapo (1993) noted a growth in the number of pupils in schools, especially in developing countries. Other examples include increases in the cultural and linguistic diversity of students, particularly in countries in which immigration is on the rise, and reported increases in the numbers of students who are at risk for school failure and drop out. The classroom population is also changing as a result of the inclusive education movement, which is becoming part of an emerging international agenda (Clark, Dyson, & Millward, 1995; Mitchell, 1994; Sebba & Ainscow, 1996). The increases in the numbers of students with challenging educational needs in schools in developed and developing countries have major implications for the work of administrators, school service professionals, and, in particular, classroom teachers. Attitudes, commitment, knowledge, and skills necessary to meet the educational needs of diverse learners are key factors in determining the success and progress of all students.

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One of the personal characteristics we explored in this study, which may be linked to teachers' behavior and motivation in inclusive classrooms, is teachers' sense of selfefficacy. Bandura (1977, 1986) gave prominence to the concept of self-efficacy in his social learning theory. According to Bandura, behavior is acquired and regulated through a central cognitive mechanism-the person's sense of self-efficacy. He differentiated between two concepts, response outcome expectations (i.e., belief that behavior will lead to desired outcomes) and perceived self-efficacy (i.e., belief in one's capability to accomplish a certain level of performance). Gibson and Dembo (1984), Dembo and Gibson (1985), and Ashton (1985) applied the concept of self-efficacy to teaching by using a two-factor dimensional construct of teacher efficacy. The first factor represented a teacher's sense of Teaching Efficacy (TE), or belief that any teacher's ability to bring about change is limited by factors external to the teacher, such as home environment, family background, and parental influences. The second factor represented a teacher's sense of Personal Teaching Efficacy (PTE), or belief that he or she has the skills and abilities to influence student learning and behavior.

Researchers have examined the relationships between teachers' sense of efficacy and their behaviors, including classroom instruction, behavior management, and special education placement decisions. For example, Gibson and Dembo (1984) reported that high-efficacy teachers spent more time monitoring and checking seat work and more time leading students to correct answers through questioning rather than giving the answer or calling on another student. Saklofske, Michayluk, and Randhawa (1988) found small but significant correlations between student teachers' sense of personal efficacy and their supervising teachers' ratings of behaviors, such as lesson presentation, classroom management, and questioning behaviors.

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Emmer and Hickman (1991) found that scores on the efficacy subscales were positively correlated with student teachers' preferences for positive management strategies (i.e., talking with a student, modifying assignments). They found no significant correlations between these subscales and teacher preferences for reductive strategies (i.e., using time-out, warnings). Woolfolk, Rosoff, and Hoy (1990) found negative correlations between teachers' beliefs about their own instructional competence and their attitudes about pupil control. The more efficacious the teachers were, the less custodial was their perspective (i.e., the belief that school is a setting concerned primarily with maintenance of order and that students must be managed through punitive measures). Jordan, Kircaali-Iftar, and Diamond (1993) reported that elementary school teachers with preventative beliefs (i.e., those who accept the responsibility to try to solve student problems by modifying instructional activities and communication with others) had higher self-efficacy scores than teachers with restorative beliefs (i.e., those who assume that the problems reside largely with the pupil). Furthermore, teachers with restorative beliefs rated the removal of students identified as exceptional or at risk from the classroom as a more desirable alternative than preventative teachers who preferred in-class consultation support. Similarly, Soodak and Podell (1993) found that general educators with a greater sense of personal efficacy as compared with teachers with a lesser sense of efficacy were more likely to perceive the regular education placement as more appropriate for students with learning and behavior problems.

The literature reported that several variables were associated with self-efficacy beliefs, including coursework, practica, and experience. For example, Dembo and Gibson (1985) reported that for preservice teachers with course work and experience, there was an increase in PTE; yet, in the final semester of student teaching, the scores decreased. The authors also reported that although TE scores were higher for preservice teachers than for experienced teachers, those scores declined with experience for all groups. Housego (1992) also found a significant decrease on TE scores for Canadian student teachers during the first term of their training. That trend continued until the last term. On the PTE scores, however, there was a significant increase by the end of the first term. That trend showed a slight increase until the last term of training. In their study of preservice Korean teachers, Gorrell and Hwang (1995) reported a significant increase on PTE scores between the 1st and 4th year of training, but they found no significant differences on TE scores over time. Romi and Daniel (1999) reported a significant decrease on TE scores between the 1st and 4th year of training of preservice general education student teachers in Israel; and PTE scores remained about the same with a slight trend to decline over time. For novice teachers, Chester and Beaudin (1996) reported that age and prior teaching experience were associated with changes in selfefficacy beliefs during the 1st year of teaching: For older

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novices (those without previous experience), there was an increase in their self-efficacy beliefs, and for younger novices, there was a decrease. In contrast, the self-efficacy beliefs of all experienced teachers (i.e., teachers who had taught in other districts or had returned to teach) tended to decline, with older teachers having slightly larger decreases than their younger counterparts.

Special education legislation in the United States, namely, the Individuals with Disabilities Education Act of 1997 (first enacted in 1975) and similar legislation in other countries including Israel that mandated inclusion (Leyser, Kapperman, & Keller, 1994), have resulted in the placement of increasing numbers of students with disabilities in general education classrooms (Avissar & Leyser, 2000; U.S. Department of Education, 1999). The success of this educational movement depends, to a large measure, on the willingness and skills of teachers to make accommodations for individual needs (Bender, Vail, & Scott, 1995).

Several studies, using mainly questionnaires and rating scales, have investigated general educators' views and perceptions of the desirability, feasibility, and actual use of differentiated, adapted, and effective instructional practicesneeded for teaching diverse learners. Collectively, data in these studies suggested the following:

1. Teachers stated a preference for instructional practices that they implemented directly in the classroom, rather than relying on other professionals, or for practices delivered outside the classroom (Algozzine, Ysseldyke, Christenson, & Thurlow, 1983; Ellett, 1993; Johnson & Pugach, 1990).

2. Teachers rated adaptations related to the social or emotional well-being of mainstreamed students as being more desirable than those requiring curricular or environmental adaptations. Examples included providing reinforcement and encouragement, establishing a personal relationship with the student, and emphasizing the good qualities of the student's behavior (Ellett, 1993; Johnson & Pugach, 1993; Schumm & Vaughn, 1991).

3. Teachers were more willing to consult school professionals, including fellow teachers, about academic problems than about behavior intervention strategies. However, teachers did not believe that consultative actions were effective interventions (Algozzine et al., 1983; Blanton, Blanton, & Cross, 1994; Cole & Leyser, 1999; Ellett, 1993; Johnson & Pugach, 1990).

4. Teachers reported using typical or routine classroom accommodations they might make for any student. The primary mode of teaching reported was whole-group instruction (Baker & Zigmond, 1990). Teachers made few adaptations intended to address the needs of individual students, such as adjusting the physical arrangement of the room, adapting materials, making long-range plans, adjusting course content, or adapting scoring or grading criteria (Fuchs & Fuchs, 1998; McIntosh, Vaughn, Schumm, Haager, & Lee, 1994; Schumm & Vaughn, 1991; Schumm, Vaughn, Gordon, & Rothlein, 1994; Ysseldyke, Thurlow, Wotruba, & Nania, 1990). 5. Teachers perceived or rated the desirability of implementing a variety of instructional adaptations for students with disabilities in general education classrooms significantly higher compared with the rating or perceptions of their feasibility (Schumm & Vaughn, 1991; Schumm, Vaughn, & Saumell, 1994; Vaughn, Reiss, Rothlein, & Hughes, 1999).

6. Teachers stated that they used positive or reinforcing interventions for classroom behavior problems rather than punitive interventions or those that include punishment, such as time-out or removal from the classroom (Alderman & Nix, 1997; Cole & Leyser, 1999; Ellett, 1993; Johnson & Pugach, 1990; Martens, Peterson, Witt, & Cirone, 1986; Whinnery, Fuchs, & Fuchs, 1991).

The purpose of this study was to expand the knowledge base by investigating self-efficacy beliefs and choices of instructional strategies of student teachers (a group not widely studied especially on choices of inclusion adaptations) and by offering an international perspective by examining Israeli student teachers. In a recent study of preservice teachers in Korea, Gorrell and Hwang (1995) found that there may be common experiences and similar perceptions of self among preservice teachers, across national boundaries. Specifically, the goals of this investigation were (a) to examine whether efficacy beliefs of Israeli student teachers are related to their choices and perceived effectiveness of instructional practices needed in inclusive environments; (b) to explore the relationship between the students' efficacy beliefs and their major area of study and year of training; and (c) to examine the willingness of these preservice teachers to use differentiated instructional approaches and perceptions regarding the effectiveness of these approaches.

Teacher training in Israel occurs in 31 teacher training colleges and 7 universities. Many of the colleges are now academic (4-year programs) and grant a teacher certification and a B.Ed. degree (or B.A. in collaboration with a university). There are still a few 3-year teacher training institutions (seminars) and tracks within colleges that have 3-year programs and award a senior teacher certificate. Colleges prepare teachers for kindergarten through junior high positions. Universities prepare teachers for secondary teaching positions (Kurian, 1988; The Ministry of Education and Culture, 1993).

# Method

#### **Participants**

Participants included 191 general education preservice teachers. All were women. Fifty-three were students in the area of early childhood education, 57 were in the area of elementary education, and 81 were in the area of the junior high education. One hundred and nine were in their 1st year of study, 45 were in their 2d year, and 33 were in their 3rd year.

# Instruments

Teacher Self-Efficacy Scale. We used the Hebrew version of the short version of the Teacher Efficacy Scale developed by Gibson and Dembo (1984). The scale was designed to measure two dimensions or factors: Factor 1 (PTE) was composed of 10 items, and Factor 2 (TE) was composed of 8 items. Included also was a third subscale or factor composed of 7 social relationship items that Rich, Lev, and Fischer (1996) identified as Teacher Efficacy for Enhancing Social Relationships (TES). Responses to each item were spread along a 5-point Likert-type scale, ranging from 1 =strongly disagree to 5 = strongly agree. In the data analyses, several scores were reversed so that the higher value responses represented higher self-efficacy beliefs for all items. Gibson and Dembo (1984) reported an internal consistency reliability of .79 for the short form. Rich et al. (1996), who added to the short form a social domain, reported reliability coeffecients for the three subscales as follows: .79 (PTE), .79 (TE), and .87 (TES).

The factor analysis conducted on the scale used in this study yielded only PTE and TE factors. The social items were included in these two factors. The reliability coefficients for the two subscales were .74 for PTE and .72 for TE.

A questionnaire about instructional interventions. We used a teacher rating scale of 59 instructional classroom behaviors. The instrument was adapted and minimally modified from several similar instruments reported in the U.S. literature (Bender, 1992; Ellett, 1993; Johnson & Pugach, 1990; Schumm & Vaughn, 1991) and translated into Hebrew. These instruments were designed to measure teacher perceptions regarding the acceptability of instructional practices identified as related to effective teaching and successful mainstreaming. Researchers who developed and used these scales reported data to support the content validity of these measures (i.e., Bender, 1992; Schumm & Vaughn, 1991) and acceptable levels of reliability. For example, Johnson and Pugach (1990) and Schumm and Vaughn (1991) reported reliability coefficients in the .90s for their two subscales; Bender (1992) documented reliabilities from .74 to .88.

In the first part of the questionnaire, we asked participants to provide demographic information (i.e., gender, area of certification, year of study). The second part included a checklist of the 59 instructional and management practices organized along seven areas of teacher behavior. These areas were similar to those that Daniels and Vaughn (1999) included in their scale (developed from the Common Core of Knowledge and Skills of the Council Exceptional Children, which they validated with general educators).

We asked participants to rate each of the 59 items on a 5point Likert-type scale in regard to the intent to use and the perceived effectiveness of each practice. Ratings ranged from 1 = not at all to 5 = very frequently or very effective.

The seven subscales of the instrument were as follows: (a) Individualized Differentiated Instruction (e.g., "Provide

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individualized instruction for low ability students," and "Modify and adopt scoring and grading for students experiencing problems"); (b) Assessment for Instruction (e.g., "Analyze subskills in the student academic problem area and teach prerequisite skills first"); (c) Behavior Management (e.g., "Focus on positive consequences for appropriate behavior"); (d) Communication With Parents (e.g., "Talk to students' parents about ways to work on student behavior problems"); (e) Communication With School Professionals (e.g., "Consult with psychologist or counselor about ways to improve student behavior"); (f) Communication with Principal (e.g., "Consult with principal about solutions for student academic/behavior problems"); and (g) Communication With Students (e.g., "Discuss behavior/academic problems with students to get students' perspective").

The Cronbach alpha coefficients of reliability for the seven subscales on use ranged from .694 to .906 and on effectiveness from .713 to .912. The reliability coefficient for the total scale for use was .942 and for effectiveness .943. We administered the two survey instruments to student teachers in the largest teacher training college in Israel. Participants also responded to several other scales, which were part of a larger study on tutoring conducted in this college.

## Results

# Relationships Between Efficacy Beliefs and Instructional Choices

Table 1 shows the correlations between the PTE and TE scores and the ratings for use and effectiveness of seven instructional groups. We obtained low yet statistically significant, positive correlations (most at the .001 level) between PTE and each of the instructional categories for the willingness to use and perceived effectiveness. These correlations suggested that the higher the sense of personal selfefficacy, the more preservice teachers were willing to use a variety of instructional approaches that support learning of students with diverse educational needs. However, findings showed no significant correlations between TE and any of the instructional approaches for willingness to use and perceived effectiveness. This result suggested that the degree to which a student teacher believes that teachers can foster student academic achievement, despite negative external factors, was not related to their choices of instructional strategies or perception or their effectiveness.

# Comparison of Self-Efficacy Beliefs by Major and Year of Study

Table 2 presents the comparisons between mean PTE and TE scores by major area of study and year of study. We found significant differences on the two factors between preservice teachers majoring in early childhood, elementary, and junior high education. On PTE scores, there was a significant difference between groups, F(2, 188) = 3.71, p =.02. Post hoc comparisons (Tukey's test) revealed that students majoring in junior high education had a significantly higher mean score (at the .05 level) than students in early childhood education. No other comparisons between groups were statistically significant.

We also obtained highly significant differences between groups on TE, F(2, 188) = 10.84, p = .001. Post hoc comparisons revealed that the highest mean scores were of student teachers majoring in early childhood education. Their scores were significantly higher (at the .05 level) than the scores of those majoring in elementary education and junior high education. We found no differences between elementary and junior high majors. The comparisons between selfefficacy beliefs by year of study suggested a trend that was not statistically significant at the .05 level on PTE and TE scores. For both factor scores, we noted a decline for the 3rd-year student teachers compared to the scores of 1st- and 2nd-year student teachers.

Instructional group	Self-efficacy factor scores									
	PTE				TE					
	Use		Effectiveness		Us	e	Effectiveness			
	r	p	r	p	r	p	r	р		
Individualized differentiated										
instruction	.39	.001	.25	.001	.05	ns	02	ns		
Diagnostic teaching	.31	.001	.24	.001	.03	ns	12	.10		
Behavior management	.28	.001	.21	.001	.10	ns	.03	ns		
Communication with										
Parents	.24	.001	.15	.04	.05	ns	.01	ns		
Professionals	.22	.001	.23	.001	10	ns	.03	ns		
Principal	.18	.01	.23	.001	10	ns	.03	ns		
Students	.24	.001	.22	.001	02	ns	12	.0		

Groups	2 Scores and Use and Effectiveness of Instructional
	Self-efficacy factor scores

Table 1 Canada Gana Batanan DTE and TE Caraca and Day and Effect

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## Use and Perceived Effectiveness of Instructional Practices

We calculated means and standard deviations for each of the 59 instructional strategies for the willingness-to-use scale and the effectiveness scale. We ranked each mean score from the highest score (1) to the lowest score (59).

Table 3 presents examples of instructional and diagnostic teaching strategies. Preservice teachers in this sample expressed a high degree of willingness to implement strategies aimed at providing a supportive and encouraging learning environment to students. Such strategies include giving positive feedback and offering encouragement and support for students' academic performance. Preservice teachers also plan to use instructional strategies that teachers frequently use in general classrooms, such as using textbooks and worksheets that meet student needs, using different grouping techniques, and demonstrating and modeling academic tasks. Preservice teachers also perceived these strategies as very effective (ranking in the first quartile). However, although preservice teachers perceived several strategies related to individualized instruction for students with academic difficulties as very effective, they did not express a

			PTE				TE	
Variable	М	SD	F	Group comparison	М	SD	F	Group comparisor
Major								
Early childhood								
(n = 53)	4.21	0.50			4.07	0.44		
Elementary			3 71	1 - 3			10.94	2 - 1
education			(n - 02)	(05)			10.64	2 < 1
(n = 57)	4.30	0.37	(p = .02)	(p = .03)	3.72	0.31	(p = .001)	(p = .05)
Junior high								3 < 1
(n = 81)	4.42	0.48			3.87	0.39		(p = .03)
Year								
lst (n =109)	4.35	0.48	2.25		3.90	0.40	1.57	_
2nd (n = 45)	4.38	0.42	(p = .10)		3.92	0.43		_
3rd(n = 33)	4.17	0.43	-		3.77	0.36		

	_	Use		Effectiveness			
Intervention	М	SD	Rank	М	SD	Rank	
Give systematic and positive feedback to student							
answers.	4.24	0.93	2	4.58	0.68	6	
Reinforce and support student's attempts at academic							
improvement.	4.17	0.97	4	4.72	0.63	1	
Use different grouping techniques.	4.22	0.92	3	4.60	0.72	4	
Use different textbooks or materials to meet needs of							
students with difficulties.	4.15	0.89	6	4.64	0.67	2	
Model and demonstrate difficult academic tasks.	4.10	1.01	9	4.54	0.85	8	
Use variety of materials, media/approaches.	3.99	0.95	19	4.59	0.73	5	
Give additional explicit oral or written instruction to the							
student.	3.93	1.11	23	4.55	0.66	7	
Plan learning activities based on students' strengths and							
difficulties.	3.91	0.99	24	4.31	0.85	27	
Teach at a slower pace or in a different sequence based							
on needs.	3.86	0.98	28	4.49	0.72	12	
Provide individualized instruction for slow ability							
students.	3.89	1.14	25	4.48	0.81	14	
Determine ways how student learns best.	3.85	1.03	29	4.36	0.81	24	
Analyze subskills in student's problem area and teach							
prerequisite skills first.	3.83	1.06	31	4.26	0.82	30	
Provide opportunities for additional drill and practice.	3.76	1.05	32	4.33	0.82	26	
Use modified or different grading system.	3.32	1.30	47	3.92	1.16	45	

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high willingness to apply these techniques. For example, they ranked in the second quartile use alternative materials or supplementary aids, provide additional instruction, teach at a slower pace, or offer individualized instruction. These participants may not be supportive or may lack skills needed to use these diagnostic teaching methods. We obtained relatively low rankings (in the second quartile) on willingness-to-use and effectiveness for diagnostic prescriptive teaching practices (e.g., planning learning activities based on students' strengths and difficulties or determine ways how student learns best; Table 3). We also obtained low rankings in the area of modifications and adaptations of test taking and grading procedures for students who experience academic difficulties.

Table 4 contains a list of educational strategies that focus on communication and interaction practices with students, parents, school professionals, fellow teachers, and the principal. The prospective teachers expressed a strong intent to communicate with their students to find solutions and answers to learning and behavior problems. They also perceived these interactions as effective. Still, they were less inclined to delegate responsibility to their students (i.e., have student take charge in monitoring their own progress). Responses also indicated their intention to discuss and consult with parents about behavior and learning difficulties of the child, even though they did not perceive this contact to be effective. Participants ranked contact with special education and related service personnel, such as the psychologist and school counselor, in the first quartile (i.e., high intent to use). They also perceived these interactions as effective. A different picture emerged in regard to future contacts with fellow teachers. Although they expressed some willingness to collect data from other teachers on students' behavioral and academic difficulties (rankings in the second quartile), they were much less willing to consult them to find solutions to these problems. Participants perceived contact with colleagues, and in particular, consultations, as ineffective strategies. Findings also revealed an unwillingness to compile information or consult with the building principal regarding academic or behavior problems of students. Such contact was also judged as ineffective (rankings were in the third quartile).

Table 5 contains examples of interventions related to classroom and behavior management. Participants reported a strong intent to use positive strategies, such as provide encouragement and support to improve behavior, use positive reinforcement, and focus on the student's positive behavior. Participants also believed that these strategies were effective. Consistent with this intent was a strong rejection of negative or punitive approaches, such as removal of students from the classroom or use of physical restraint. Participants also believed that such approaches were ineffective (rankings in the third quartile). Somewhat surprisingly, these trainees seemed to reject the use of sev-

		Use		Effectiveness			
Intervention	М	SD	Rank	М	SD	Rank	
Discuss behavior problems with student.	4.17	1.11	5	4.52	0.83	10	
Discuss academic problems with student.	4.13	1.09	7	4.49	0.86	13	
Talk to student's parents about ways to solve student's							
behavior problems.	4.12	1.02	8	4.39	0.84	21	
Consult with resource or special education teacher about							
ways to help student academically.	4.10	1.07	10	4.50	0.77	11	
Consult with psychologist or counselor about ways to							
improve student behavior.	4.09	1.05	11	4.47	0.80	17	
Consult with psychologist or counselor to find solutions							
for student's academic problems.	4.06	1.02	13	4.47	0.78	16	
Have student monitor progress toward behavioral goals.	4.04	1.07	15	4.39	0.84	22	
involve parents in order to find solutions for student's							
academic problems.	4.02	1.00	16	4.36	0.81	25	
Collect data from other teachers about student's							
academic difficulties.	3.99	1.04	20	4.26	0.91	31	
Collect data from other teachers about student's	1 90	1.1.4	07	4.00	1 10	20	
Denavior problems.	3.88	1.14	27	4.09	1.10	39	
students' behavior	2 71	1 1 1	26	4.04	1.00	41	
Suddhis dellaviol.	5.71	1.11	50	4.04	1.08	41	
academically	3 65	1 1 2	28	4.01	1 1 1	42	
Consult with principal about students' behavior problems	3.05	1.10	50	3.45	1.11	50	
Compile data from principal about students' behavior	5.21	1.27	50	5.45	1.17	50	
problems.	3 16	1 32	52	3 4 4	1 23	51	
Consult with principal about students' academic	5.10	1.52	52	0.77	1.25	51	
1'ce 1.'	2 10	1.00		2.26			

		Use		Effectiveness			
Intervention	М	SD	Rank	М	SD	Ranl	
Encourage and support student attempts at improving							
behavior.	4.27	0.93	1	4.63	0.72	3	
Use reinforcers for desired student behavior.	4.06	0.97	12	4.53	0.70	9	
Focus on student's positive behavior.	4.05	1.08	14	4.47	0.83	15	
Give consistent responses to appropriate and							
inappropriate student behaviors.	3.73	1.19	34	4.05	1.14	40	
Establish specific positive consequences for							
appropriate behavior.	3.71	1.19	35	4.12	0.97	38	
Establish specific negative consequences for							
inappropriate behavior.	3.44	1.22	44	3.63	1.20	47	
Request a staffing for student with behavior problems.	3.42	1.14	45	3.77	1.06	46	
Move student with behavior problem to another location							
in the classroom.	3.37	1.24	46	3.40	1.15	53	
Modify classroom rules for student when needed.	3.18	1.11	51	3.48	1.13	48	
Ignore inappropriate student behavior.	3.11	1.23	54	3.48	1.13	48	
Remove student from class.	2.76	1.37	56	2.53	1.18	57	
Use group contingencies to change student inappropriate							
behavior.	2.44	1.25	57	2.80	1.41	56	
Send student to the principal.	2.20	1.32	58	1.99	1.20	58	
Use physical restraint of student when needed.	1.55	0.99	59	1.64	1.06	59	

Table 5.—Means, Standard Deviations, and Rankings of Classroom Interventions for Intent to Use and

eral behavior modification techniques that are stressed in preservice training programs in the United States, especially for special educators: Participants indicated that they did not intend to select a plan that established positive or negative consequences for student behavior, apply consequences consistently, use group contingencies, or ignore undesirable behaviors to reduce their frequency. Responses also revealed a need to show that they are in charge or in control and would like to be perceived as teachers who do not give in (e.g., by expressing reluctance to request a staffing for students with behavior problems or by being unwilling to modify rules). Participants also rated these strategies as very ineffective. The mean scores obtained for the 59 classroom intervention strategies for use scale and the effectiveness scale indicated that for all strategies, except "send student to principal" and "remove student from class," scores were significantly higher for perceived effectiveness (desirability). The Spearman rank-order correlation between the rankings of the mean scores for the two scales yielded a high positive correlation of .90.

## Discussion

Findings from this study have shown that the PTE factor of a sample of preservice Israeli teachers was related to their choices of a variety of instructional strategies needed in diverse and inclusive classrooms. Participants who obtained higher PTE scores (were more efficacious) obtained higher scores on the intent to frequently use individualized and diagnostic teaching strategies; implement a variety of behavior management techniques; and communicate with parents, professionals, students, and the building principal than did participants who were efficacious to a lesser degree. They also perceived these strategies to be more effective. These results corroborate data reported by other investigators, mainly in the United States, demonstrating that teachers with high self-efficacy scores concentrate more on individualized instruction and adapt teaching practices (Minke, Bear, Deemer, & Griffen, 1996; Saklofske et al., 1988), hold more supportive attitudes, and perceive themselves as more successful in instructing mainstreamed special education students (Brownell & Pajares, 1999; Soodak & Podell, 1993), use positive behavior management strategies (Emmer & Hickman, 1991; Saklofske et al., 1988), and are more involved in collaborative activities with others (Gibson & Dembo, 1984; Minke et al., 1996). The correlations we obtained in this study were in the low positive range-a finding consistent with data reported across many studies (see Coladarci, 1992).

However, findings regarding the relationship between TE and the choices and perceptions of effectiveness of these instructional practices were all negligible. Results from other studies that examined both factors tend to be mixed. Some researchers found that the PTE factor was a better predictor of teacher behavior than the TE factor (i.e., Coladarci & Breton, 1997; Minke et al., 1966; Saklofske et al., 1988), and others reported that the TE factor was a stronger predictor (Coladarci, 1992).

The analysis of self-efficacy scores by major area of study revealed significant differences between the three teacher groups. Student teachers planning to be certified as junior high school teachers had significantly higher PTE scores than did those majoring in early childhood education. We found no significant differences between junior high and elementary education majors. However, students majoring in early childhood education obtained significantly higher TE scores than did students majoring in elementary and junior high education. These differences may have several explanations: First, there is evidence of differences in background or personal characteristics between students choosing different teaching careers. As reported by Kfir, Ariav, Feigin, and Libman (1998), students majoring in junior high education enter their training with higher mean high school matriculation scores than do students majoring in elementary and early childhood education. They also obtain higher mean scores on the college entrance examination. These students seem to feel more confident in their abilities and learning potential, thus believing more in their capability to become effective teachers, as shown by higher PTE scores. Students majoring in early childhood education may be more optimistic that the educational system and teachers are capable of fostering the achievement of young children, despite negative family influences during early childhood years, and preservice teachers seeking certification in elementary and junior high education may be less confident in the power of teaching to mitigate against such external factors for older students, thus their lower TE scores. Differences between groups may also reflect different learning experiences and socialization patterns during their preservice training.

Comparisons by year of study revealed that scores for PTE and TE were lower for 3rd-year students than for the 1st- and 2nd-year students. The decline, however, was not statistically significant at the .05 level. Because we did not examine students in the 4th year, we do not know whether the decline will continue. Data from other samples of prospective teachers support our findings, showing a decline on the TE score over time (i.e., Dembo & Gibson, 1985; Housego, 1992; Romi & Daniel, 1999) but are inconsistent with studies revealing an increase for PTE over time (i.e., Gorrell & Hwang, 1995; Housego, 1992) or showing no change (Romi & Daniel, 1999).

Findings obtained from the rankings of the acceptability of different instructional strategies revealed several interesting patterns. In the area of classroom instruction, the preservice teachers indicated their intent to design and implement instructional procedures that are directed toward all students and that benefit the whole class by providing a supportive and positive learning environment. Examples included reinforcing academic performance, establishing work groups, using materials and textbooks appropriate for the grade level, and modeling and demonstrating learning tasks. All of these are examples of instructional strategies frequently used in general education classrooms that are also taught and demonstrated during their preservice training. However, they expressed less willingness to implement individualized instructional procedures, such as teaching at a slower pace, giving additional instructions, providing more time to practice, and making material and media modifications or testing and grading adaptations. Prospective teachers believed that most of these individualized strategies and adaptations were effective in helping students with learning difficulties. Participants expressed a low willingness (possibly because of limited training or lack of skills) in regard to the use of diagnostic teaching in the classroom (i.e., plan activities, based on student strengths and difficulties, that are examples of effective instructional strategies usually practiced in special education classrooms. Similar findings suggested that general education teachers in the United States (Schumm et al., 1994; Schumm & Vaughn, 1991; Scott et al., 1998) and in Israel (Leyser & Ben Yehuda, 1999) are willing to use typical modifications they might make of any student yet are less willing to use differentiated individualized instruction reported by several investigations.

The preservice teachers expressed a strong willingness to communicate and interact with students and parents to support academic progress and appropriate classroom conduct. However, they did not perceive such interactions as effective. In light of findings that barriers and difficulties exist in the relationships between teachers and parents of children with disabilities in the United States (Bennett, Deluca, & Burns, 1997) and in Israel (Brandes & Nesher, 1996), it would be interesting to follow up by exploring how participants' perceptions about communicating with parents have changed once they have become practicing teachers. That prospective teachers did not express a strong intent to consult with fellow teachers about academic and behavior problems and did not perceive such communication as very effective may be surprising, although similar results were also reported for practicing teachers (i.e., Blanton et al., 1994; Ellett, 1993). Responses also revealed that these prospective teachers did not intend to communicate and consult with the building principal regarding academic and behavior problems of their students. Cole and Leyser (1999) also supported this finding. Such reluctance may be interpreted as a possible fear of being perceived as incompetent by the building administrator, who may provide low evaluations of their performance. It may also suggest that principals lack training and skills in special education necessary to provide advice in working with special needs students (Valesky & Hirth, 1992; Wiener & Norton, 1993). Consistent with findings reported by many other investigators, these prospective teachers plan to rely on a positive approach to classroom and behavior management while rejecting punitive measures such as removal or exclusion from the classroom (Alderman & Nix, 1996; Ellett, 1993). There was, however, some indication that they do not plan to frequently use several management techniques that represent a behavioral orientation model, probably because behavior modification techniques are not stressed in their training.

The study has several implications for theory, practice, and future cross-cultural research. In regard to the teacher efficacy construct, there are some unresolved issues (for a comprehensive review, see Tschannen-Moran, Woolfolk, Hoy, & Hoy, 1998). One of these issues relates to the

assessment of teacher efficacy. Is teacher efficacy a global judgment of capability to instruct children across varied contexts? Or is it specific or differentiated to a given situation or school domain? (See Brownell & Pajares, 1999; Deemer & Minke, 1999; Rich et al., 1996.) In this study, we validated the two-factor structure reported by Gibson and Dembo (1984). However, we did not validate a third subscale or factor assessing teacher efficacy for enhancing social relations, reported by Rich et al. (1996). Furthermore although a TE subscale emerged in the factor analysis, we found no correlation between this factor and choices of instructional strategies and evaluations of their effectiveness. As noted earlier, questions regarding the TE factor, such as what this factor really represents have emerged in the literature (i.e., Coladarci & Breton, 1997; Rich et al., 1996). Additional efforts are needed to resolve issues related to the measurement of the teacher efficacy construct.

Findings regarding the choices of instructional strategies suggest that teacher training programs at the preservice level need to provide additional knowledge for general education majors and focus more on the development of skills that are required for successful teaching of students with diverse learning and behavior needs. More extensive training and practice are required in the areas of individualized and differentiated instructional techniques by stressing adaptations of materials, assignments, and assessment, and in the area of classroom and behavior management by focusing on systematic data-based management strategies.

Several empirical studies provide evidence that training programs, particularly during the initial teacher preparation stage, are effective in the development and enhancement of self-efficacy beliefs. These programs have incorporated types of experiences identified by Bandura (1977, 1986), as sources contributing to self-perception of competence (i.e., mastery experiences, physiological and emotional arousal, vicarious experiences and social persuasion; Tschannen-Moran et al., 1998). On the basis of these data, several courses of action can be taken to enhance self-efficacy. It is important to plan and provide preservice teachers with supportive and successful learning experiences in course work and practica, starting at the early stages of their program and culminating with the capstone experience of student teaching. Trainee confidence in their ability to instruct, manage, and evaluate student progress in inclusive settings is likely to be enhanced when trainees are provided with opportunities to successfully implement the acquired competencies in the classroom. Careful attention is needed in selecting observation and practica sites to ensure that students are placed with competent and skillful teachers who demonstrate and model positive attitudes and effective instructional behaviors in inclusive classrooms.

Several limitations of this investigation should be addressed. First, participants in the present study were from only one teacher training college; although it was one of the largest in Israel, the study should be replicated in other colleges in Israel that differ in size, religious orientation, and

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population (Jewish, Arab). Furthermore, this line of research should be extended to other countries to explore similarities and differences in prospective educators' efficacy beliefs and conceptions about teaching throughout the world. Second, in this study, we used two self-report instruments. In future investigations, other measures are recommended, such as observations of actual classroom behaviors, reactions to videos of teaching contexts and in-depth interviews regarding choices of teaching practices in inclusive settings.

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