

**DIFFERENCES BETWEEN ELEMENTARY AND  
SECONDARY SCHOOL TEACHERS IN TRINIDAD AND  
TOBAGO ON TEACHER SELF-EFFICACY**

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The present study examined self-efficacy in 77 elementary and 146 secondary school teachers, most of whom were taking an educational psychology course at The University of the West Indies (UWI). Participants completed Gibson and Dembo's (1984) Teacher Efficacy Scale (TES), Bandura's (n.d.) Teacher Self-Efficacy Scale (TSES), and two single items developed by researchers at the RAND Corporation. Elementary teachers reported higher levels of self-efficacy than did secondary teachers on all variables. TES and TSES subscale scores resulted in moderate to high internal consistency estimates, with the TSES scores having higher scores on average. TSES scores also had stronger intercorrelations than did TES scores or RAND items. Number of Years Teaching (NYT) was not related to self-efficacy, but a single global self-rating of teaching ability had moderate correlations with some efficacy variables. Future research should examine the factor structure of TSES scores and the potential of increasing the self-efficacy of secondary teachers through teacher training.

To date, researchers have identified a number of variables that are related to effective teaching, including clarity (Hines, Cruickshank, & Kennedy, 1985; Land, 1985; Rosenshine & Furst, 1971), enthusiasm (Rosenshine, 1970), knowledge of subject matter (Vecchio & Costin, 1977), and teachers' self-efficacy beliefs (Gibson & Dembo, 1984; Saklofske, Michayluk, & Randhawa, 1988). Although many of these characteristics (e.g., clarity, enthusiasm) are behavioural in nature and can be improved with teacher training (Murray, 1985, 1997; Murray & Lawrence, 1980), teachers' perceived self-efficacy is a cognitive variable, and can only be changed through reflection (Bandura, 1997).

Bandura (1997, p. 37) defined perceived self-efficacy as "what you believe you can do with what you have under a variety of

circumstances,” and noted that perceived self-efficacy has a direct impact on performance:

Efficacy beliefs operate as a key factor in a generative system of human competence. Hence, different people with similar skills, or the same person under different circumstances, may perform poorly, adequately, or extraordinarily, depending on fluctuations in their beliefs of personal efficacy. (p. 37)

In other words, the skills and abilities in an individual’s repertoire are used more or less efficiently depending on the individual’s sense of self-efficacy. Competent individuals may perform poorly if their self-efficacy is low, and less-competent individuals may perform well if their self-efficacy is high (Bandura, 1992; Bandura & Jourden, 1991; Wood & Bandura, 1989). Moreover, Bandura (1977, 1978) argued that self-efficacy consisted of two facets. The first facet is the belief that one has the requisite skills to perform a task (personal self-efficacy), and the second facet is the belief that if one actually performs a task, one will be successful (outcome expectancy).

Although there has been a lot of research on the self-efficacy of teachers in the United States, relatively little attention has been paid to this variable in developing countries. The purpose of the present study was to examine perceptions of self-efficacy in a sample of practising teachers working in a cultural context outside of the United States.

### **Measuring Teacher Self-Efficacy**

#### **Single-item measurement**

The measurement of teacher efficacy began in the mid 1970s with two single item variables used by a group of researchers working at the RAND Corporation (Armor et al., 1976; Berman, McLaughlin, Bass, Pauly, & Zellman, 1977). The first RAND item – *When it comes right down to it, a teacher really can’t do much because most of a student’s motivation and performance depends on his or her home environment* – is intended to tap external locus of control, and the second RAND item – *If I really try hard, I can get through to even the most difficult or unmotivated students* – assesses internal locus of control. In these studies, the researchers reversed-scored Item 1 and summed both items to create a composite that they labelled teacher efficacy (TE), which they argued indicated the extent to which a

teacher was internally controlled (Tschannen-Moran, Hoy, & Hoy, 1998). Using these items, other researchers related TE to student achievement (Ashton & Webb, 1986), time spent by teachers in interactive instruction (Smylie, 1988), stress (Parkay, Greenwood, Olejnik, & Proller, 1988), and the decision to leave or stay in teaching (Glickman & Tamashiro, 1982). In general, these studies indicated that TE was an important teacher characteristic (Tschannen-Moran et al., 1998).

### **Development of the Teacher Efficacy Scale**

At the same time that the RAND studies were underway, Bandura (1977, 1978) was articulating his concept of self-efficacy—that behaviour is directly affected by an individual's beliefs. Gibson and Dembo (1984) used Bandura's perspective to develop the Teacher Efficacy Scale (TES). These researchers used the RAND items as markers for the two factors on their scale, assuming that the internal and external items reflected Bandura's concepts of personal efficacy and outcome expectancy, respectively (Tschannen-Moran et al., 1998). The original TES consisted of 30 items, and factor analyses of the responses of 208 teachers revealed two factors consisting of 16 of the 30 items. One factor, consisting of nine items, was labelled Personal Teaching Efficacy (PTE,  $\alpha = .75$ ) and the other factor, consisting of seven items, was more general and simply labelled Teaching Efficacy (GTE,  $\alpha = .79$ ). PTE refers to individuals' efficacy beliefs about their teaching competence, whereas GTE, or teaching outcome expectancy, refers to individuals' beliefs about the effectiveness of teaching generally. A teacher with high PTE scores believes that *he can teach*, and a person with high GTE scores believes that *teaching makes a difference*. On the other hand, teachers with low PTE and GTE scores do not see themselves as effective teachers, nor do they believe that teaching can counteract the negative influences on some students (e.g., home environments that are not supportive of learning).

In the same study, Gibson and Dembo (1984) provided convergent and discriminant validity evidence for TE as a construct using a multitrait-multimethod matrix, and concluded with a report on the classroom behaviours of high- and low-efficacy teachers. Gibson and Dembo reported low-efficacy teachers spent more time on small-group instruction, and less time monitoring and checking students' seatwork and preparing for lessons than high-efficacy teachers. Moreover, when students' responses to a question were incorrect, low-efficacy teachers spent less time in guiding the students to the correct answer than high-

efficacy teachers—low-efficacy teachers were more likely to provide the answer themselves, or to ask another student the question. The authors concluded that TE seemed to be related to teacher behaviours that affect student achievement.

Although the TES has been used in a many studies (e.g., Coladarci, 1992; Hoy & Woolfolk, 1993; Saklofske et al., 1988; Soodak & Podell, 1993; Woolfolk & Hoy, 1990), and researchers have reported support for the two factors identified by Gibson and Dembo (1984), there were concerns about items cross-loading or not achieving a salient loading on either factor (e.g., Soodak & Podell). Hoy and Woolfolk (1993) recommended using 10 of the original 30 items, as these 10 items also yielded the two factors reported by Gibson and Dembo with little attenuation of the reliability estimates of the scores (GTE  $\alpha = .72$ ; PTE  $\alpha = .77$ ).

#### **Bandura's Teacher Self-Efficacy Scale**

Bandura (1997) provided another explanation for the mixed findings from the TES. He argued that self-efficacy could not be assessed using general measures as it is not a “global disposition” (p. 42). To accurately measure self-efficacy, Bandura contended, the instruments “must be tailored to domains of functioning and must represent gradations of task demands within those domains” (p. 42). As an example, he noted that perceived self-efficacy to score baskets would probably be much more predictive of Michael Jordan's performance than perceived athletic self-efficacy, as the latter was too global. Similarly, general physical self-efficacy is less predictive of gymnasts' performance than efficacy measures tied to specific gymnastic feats (McAuley & Gill, 1983).

In the domain of TE, Bandura (1997) observed that even though the TES (Gibson & Dembo, 1984) was an improvement over single-item measures, the scale was still too general in orientation. He noted that it was necessary to measure teachers' efficacy in a number of specific areas—for example, maintaining order in the classroom, enlisting resources, involving parents, counteracting negative influences on the students—in order to capture the full range of teacher self-efficacy beliefs. Bandura (n.d.) developed the Teacher Self-Efficacy Scale (TSES) to demonstrate the range of areas that teachers need to be efficacious in. The TSES has 30 questions listed under seven different efficacy subheadings. A February, 2003 search of the extant literature using PsychInfo and ERIC revealed no studies that have used the TSES. Thus,

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there is no information available on the psychometric properties of the instrument's scores.

### **The Present Study**

The purpose of the present study was to examine the teacher efficacy construct as measured by the TES (Gibson & Dembo, 1984), the TSES (Bandura, n.d.), and the RAND items in a sample of elementary and secondary school teachers in Trinidad and Tobago. A number of research questions were examined: (a) what are the reliability estimates of TES and TSES subscale scores in this sample; (b) what are the interrelationships among TES, TSES, and RAND measures of TE; and (c) what is the relationship of years of teaching experience and teacher's ratings of their teaching ability to TE variables? A fourth question looked at mean differences between elementary and secondary school teachers on TE variables.

## **Method**

### **Participants**

The participants consisted of 223 teachers currently employed in elementary (35%) and secondary (65%) schools in Trinidad and Tobago. In the Trinidad and Tobago education system, there are different recruitment processes for elementary and secondary teachers. Elementary teachers are recruited from secondary school graduates and are often assigned to schools as Assistant Teachers. They are considered generalists and are assigned a form class to which they teach all subjects across the curriculum. Within the first two years of service they are given leave to attend one of the teachers' training colleges for a two-year training programme, after which they are designated as Teacher I. Secondary school teachers must have at least a first degree in their subject area. They are considered specialists and may be assigned several classes at different levels in the secondary school. Although they are not required to, they may enrol in the one-year in-service postgraduate Diploma in Education programme at The University of the West Indies (UWI) to further their training.

The elementary school teachers (ETs) had a mean age of about 40 years (see Table 1), and had been teaching for about 18 years on average. Seventy-nine percent of the ETs were female, 47% were of African

descent, 40% were of East Indian descent, and 12% were of Mixed descent. Less than half of the ETs (48.7%) rated their socioeconomic status (SES) as middle class, but the majority of them rated their personal experiences in elementary (77%) and secondary (76%) school as positive. Ninety-nine percent of the ETs had attended teachers' training college, but only 4% had a university degree.

The secondary school teachers (STs) had a mean age of about 35 years and had been in the teaching service for 10 years, on average. Seventy-three percent of the STs were female, 29% were of African descent, 52% of East Indian descent, and 16% of Mixed descent. The majority of STs (73%) rated themselves as middle class, and 95% of them had university degrees. Fifteen percent of the STs had attended teachers training college, and 69% and 77% respectively rated their personal experiences in elementary and secondary school as positive.

ETs were significantly older than STs and had been teaching for a longer period of time. STs reported their SES status as higher than ETs (see Table 1). Since STs are typically hired as Teacher IIs or Special Teachers and ETs are typically hired as Teacher Is, the finding on SES is not surprising. The two groups did not differ on their ratings of elementary and secondary school experiences. Seventy percent of all participants ( $n = 159$ ) were enrolled in two educational psychology courses at UWI, St. Augustine, and 30% were school-based colleagues of the teachers taking the courses. Eighty-five percent of the ETs and 70% of the STs rated their teaching ability as good or very good. The difference in mean scores for this variable was in the medium range (Cohen, 1988), with the difference favouring the ETs.

### **Measures**

All participants completed a demographic form, the TES (Gibson & Dembo, 1984), and the TSES (Bandura, n.d.). The demographic form contained questions on a number of variables, including age, gender, ethnicity, SES, teaching assignment (i.e., elementary or secondary), and years of teaching experience. This form also contained three questions asking teachers to rate their teaching ability and their experiences in elementary and secondary schools on 5-point Likert scales with both verbal and numerical anchors. The verbal anchors for the teaching ability question were *Very Poor*, *Poor*, *Average*, *Good*, and *Very Good*, and the

verbal anchors for the school experiences questions were *Very Negative*, *Somewhat Negative*, *Neutral*, *Somewhat Positive*, and *Very Positive*.

### **The Teacher Efficacy Scale**

The TES (Gibson & Dembo, 1984) is a 30-item instrument developed to measure two aspects of teaching efficacy. Gibson and Dembo reported two factors. Factor I, labelled Personal Teaching Efficacy (PTE), consists of nine items and assesses teachers' beliefs about their personal teaching ability, or "teachers' evaluation of their abilities to bring about positive student change" (Gibson & Dembo, p. 570). Factor II, labelled Teaching Efficacy (GTE), consists of seven items assessing teachers' beliefs about the efficacy of teaching in general, that is, "the extent to which students can be taught given such factors as family background, IQ, and school conditions" (Gibson & Dembo, p. 570). Internal consistency estimates for the two factors' scores were in the moderate range (PTE  $\alpha = .75$ ; GTE  $\alpha = .79$ ), and two factors were supported in studies by other researchers (e.g., Coladarci, 1992; Hoy & Woolfolk, 1993; Saklofske et al., 1988; Soodak & Podell, 1993; Woolfolk & Hoy, 1990). The 16 items that made up the two TES factors and the two single-item RAND questions—RANDPTE and RANDGTE—were included on the TES form. Reliability estimates for this sample's scores are reported in the Results section.

### **The Teacher Self-Efficacy Scale**

The TSES (Bandura, n.d.) is a 30-item measure that was developed to capture the self-efficacy of teachers across a number of roles that teachers engage in. The TSES groups the 30 items under seven subheadings:

1. Efficacy to Influence Decision Making (2 items)
2. Efficacy to Influence School Resources (1 item)
3. Instructional Self-Efficacy (9 items)
4. Disciplinary Self-Efficacy (3 items)
5. Efficacy to Enlist Parental Involvement (3 items)
6. Efficacy to Enlist Community Involvement (4 items)
7. Efficacy to Create a Positive School Climate (8 items)

Respondents rate the items on a 9-point Likert scale with verbal anchors for five of the numerical ratings: 1 = *Nothing*, 3 = *Very little*, 5 = *Some influence*, 7 = *Quite a bit*, and 9 = *A great deal*. Although Bandura (1997) argued for the use of instruments like the TSES, Tschannen-Moran et al.

(1998) warned against developing instruments that were too specific to be useful outside of a narrow context. There is no psychometric information currently available on this measure. Reliability estimates were calculated for the five TSES subscales that had at least three items and are reported in the Results section.

### **Procedure**

The demographic form, the TES, and the TSES were administered as part of a larger packet of measures to teachers who were taking an educational psychology class. Six versions of the packet were created. Each version began with the demographic questionnaire, but the other questionnaires were counterbalanced in order. No more than 22% of the sample completed any one of the six versions of the packet. Participants completed the questionnaires on their own time, and packets were returned to a designated box in the Education department at the university. Some teachers also took questionnaire packets to colleagues at the schools in which they were teaching and these packets were also returned to the box in the department. Participation was voluntary and participants did not receive course credit or any other remuneration for participation in the study. All questionnaires were completed anonymously, and the study was approved by the Institutional Review Board of The Pennsylvania State University.

### **Results**

Table 1 contains the means, standard deviations, skews, and kurtoses for all of the major variables in the study. Although means were nearer to the upper end for the efficacy variables (i.e., closer to 9 than to 1), the distributions were not extremely skewed or kurtotic. All of the efficacy variables were negatively skewed, but no skew was higher than  $-.87$ , and only three variables had kurtosis values greater than  $|1|$ : RANDGTE had a kurtosis value of  $-1.21$ , and SES and teacher ability self-rating had kurtosis values of  $2.31$  and  $1.02$ , respectively.

### **Group Differences on Self-Efficacy**

Differences between the ETs and STs on self-efficacy variables are also reported in Table 1. As can be seen, ETs reported significantly higher scores than STs on 7 of the 11 efficacy variables. The majority of effect sizes for these differences were in the medium to large range, with only

one (i.e., RANDPTE) falling in the small range (Cohen, 1988). Two of the differences that were not significant (i.e., Efficacy to Enlist Community & PTE) had effect sizes in the small to medium range. These findings indicate that the differences between the two groups on teaching self-efficacy are substantial. The two largest differences were in the areas of Instructional Self-Efficacy and Efficacy to Enlist Parents. On average, the two RAND items had lower effect sizes than the subscales.

**Table 1. Means and Standard Deviations of Major Variables**

Variables	Elementary		Secondary		Sig.	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Age	39.63	7.83	34.55	8.47	.001	.59
Years Teaching	18.32	8.48	10.27	8.11	.001	.40
Socioeconomic Status <sup>a</sup>	2.56	0.60	2.87	0.57	.001	-.51
Teaching Ability <sup>a</sup>	4.15	0.66	3.82	0.70	.001	.47
Elementary School Experiences <sup>a</sup>	3.99	0.86	3.86	0.95	.331	.14
Secondary School Experiences <sup>a</sup>	4.01	0.86	4.03	0.87	.863	-.02
Teacher Self-Efficacy Scale <sup>b</sup>						
* Efficacy to Infl. Decision Making	6.02	1.88	5.03	1.68	.001	.55
* Efficacy to Infl. School Resources	5.62	2.03	5.24	2.07	.198	.18
* Instructional Self- Efficacy	6.09	1.00	5.23	1.07	.001	.77
* Disciplinary Self- Efficacy	7.04	1.04	6.21	1.51	.001	.55
* Efficacy to Enlist Parents	6.31	1.51	4.98	1.45	.001	.83
* Efficacy to Enlist Community	4.40	1.68	3.93	1.52	.034	.30

(table continues)

**Table 1. (continued)**

*Teacher Self-Efficacy*

Efficacy to Create + School Climate	6.27	1.22	5.50	1.22	.001	.61
Teacher Efficacy Scale <sup>c</sup>						
* Personal Teaching Efficacy	4.92	0.67	4.53	0.65	.001	.58
* General Teaching Efficacy	3.45	0.89	3.11	0.82	.004	.40
RAND Items <sup>c</sup>						
* Personal Teaching Efficacy	5.14	1.19	4.56	1.34	.001	.17
* General Teaching Efficacy	4.32	1.61	3.84	1.57	.035	.30

Note. Infl. = Influence; Sig. = significance. The critical alpha for comparisons was .003.

<sup>a</sup>Rated on a 5-point Likert scale. <sup>b</sup>Rated on a 9-point Likert scale. <sup>c</sup>Rated on a 6-point Likert scale.

### Reliability Estimates

Internal consistency reliability estimates were calculated for all subscales with three or more items using Cronbach's alpha. These results are presented in Table 2. Scores on all but one of the TSES subscales resulted in estimates in the .7 to .8 range across the groups (*Mdn*  $\alpha$  = .84), with the low estimate occurring for scores on the 3-item Disciplinary Self-Efficacy subscale in the ET group. Internal consistency estimates were in the .7 range for PTE scores and in the .6 range for the GTE scores. On average, the Gibson and Dembo (1984) subscale scores have the lowest reliability estimates.

### Intercorrelations Among Efficacy Subscales

Intercorrelations among the efficacy measures are reported in Table 3. In general, PTE and GTE (Gibson and Dembo, 1984) and RANDPTE and RANDGTE (Armor et al. 1976; Berman et al., 1977) have lower correlations with other efficacy measures than the TSES scores: PTE *Mdn*  $r$  = .28, GTE *Mdn*  $r$  = .25, RANDPTE *Mdn*  $r$  = .26, and RANDGTE *Mdn*  $r$  = .20. The intercorrelations among the TSES (Bandura, n.d.) scores are almost all greater than .30,  $.27 \leq r \leq .69$ , *Mdn*  $r$  = .43, but intercorrelations

between TSES and TES scores (*Mdn r* = .27), and between TSES scores and RAND scores (*Mdn r* = .24) are also low.

**Table 2. Reliability Estimates of Self-Efficacy Variables**

Variables	Elementary	Secondary	All
Teacher Self-Efficacy Scale			
* Instructional Self-Efficacy	.78	.85	.85
* Disciplinary Self-Efficacy	.62	.84	.81
* Efficacy to Enlist Parents	.85	.75	.82
* Efficacy to Enlist Community	.86	.82	.83
* Efficacy to Create Positive School Climate	.84	.85	.86
Teacher Efficacy Scale			
* Personal Teaching Efficacy	.79	.75	.78
* General Teaching Efficacy	.63	.63	.64

*Note.* No internal consistency estimates were calculated for Efficacy to Influence Decision Making and Efficacy to Influence School Resources since these subscales had less than three items.

Nonetheless, the pattern of correlations makes theoretical sense. The correlations between GTE and RANDGTE (i.e., variables representing outcome expectancy) and between PTE and RANDPTE (representing efficacy expectancy) are at least .50, indicating 25% shared variance. Correlations between GTE and RANDGTE on one side and all the other efficacy variables are generally low, indicating that outcome and efficacy expectancies are relatively independent constructs. PTE's and RANDPTE's largest correlations with TSES scores occur with the ones more closely related to classroom-based efficacy: efficacy related to instruction, discipline, enlisting parents, and creating a positive school climate. GTE and RANDGTE have their largest correlations with instructional self-efficacy and efficacy related to positive school climate, both of which are variables that promote learning irrespective of student backgrounds.

**Table 3. Intercorrelations Among Self-Efficacy Variables**

Variables	1	2	3	4	5	6	7	8	9	10	11
Teacher Efficacy Scales											
1. Personal Teaching Efficacy	--										
2. General Teaching Efficacy	.10	--									
Teacher Self-Efficacy Scale											
3. Efficacy to Influence Decision Making	.19	.22*	--								
4. Efficacy to Influence School Resources	.11	.21*	.36*	--							
5. Instructional Self-Efficacy	.40*	.41*	.43*	.40*	--						
6. Disciplinary Self-Efficacy	.38*	.29*	.47*	.27*	.67*	--					
7. Efficacy to Enlist Parents	.36*	.24*	.37*	.33*	.60*	.55*	--				
8. Efficacy to Enlist Community	.17	.21	.30*	.39*	.42*	.31*	.56*	--			
9. Efficacy to Create Positive School Climate	.36*	.36*	.53*	.40*	.69*	.61*	.67*	.50*	--		
RAND Variables											
10. Personal Teaching Efficacy	.50*	.25*	.16	.22	.34*	.26*	.28*	.17	.34*	--	
11. General Teaching Efficacy	.05	.57*	.19	.17	.29*	.27*	.21*	.18	.36*	.11	--

\* $p < .001$ .

**Concurrent Validity Coefficients**

Table 4 contains correlations between the efficacy variables and two variables that were hypothesized to be related to teachers' self-efficacy: Number of Years Teaching (NYT) and Self-Rated Teaching Ability (SRTA).

**Table 4. Concurrent Validity Correlation Coefficients for Efficacy Scores**

Variables	Elementary		Secondary	
	Teaching Ability	Years Teaching	Teaching Ability	Years Teaching
Teacher Self-Efficacy Scale				
* Efficacy to Influence Decision Making	.15	.28	.13	.28
* Efficacy to Influence School Resources	.23	.25	.12	.05
* Instructional Self-Efficacy	.29	.08	.35*	.21
* Disciplinary Self-Efficacy	.17	.13	.39*	.23
* Efficacy to Enlist Parents	.34*	.18	.21	.18
* Efficacy to Enlist Community	.18	.03	.20	.19
* Efficacy to Create Positive School Climate	.31	.22	.34*	.16
Teacher Efficacy Scale				
* Personal Teaching Efficacy	.03	.10	.37*	.20
* General Teaching Efficacy	.21	.06	.10	.12
RAND				
* Personal Teaching Efficacy	.03	.05	.16	.01
* General Teaching Efficacy	.07	.14	.19	.26

Note: Elementary teachers  $n = 72$ ; Secondary teachers  $n = 118$ .  
\* $p < .001$ .

The correlations are presented separately for elementary and secondary school teachers for two reasons. First, the two groups differed significantly on most of these variables. Second, since most of the ETs

received teacher training but had no degree, and most of the STs had degrees but did not receive teacher training, the two groups represented individuals who had become teachers via different routes. To facilitate interpretation along these lines, teachers who had a degree and had also received teacher training were excluded from these analyses, reducing the participants in both the ET ( $n = 72$ ) and ST ( $n = 118$ ) groups. Only correlations above .30 (i.e., accounting for at least 9% of shared variance) were interpreted.

NYT and SRTA were modestly correlated for the STs,  $r(115) = .34, p < .001$ , but there was no relationship between these variables for ETs,  $r(69) = .13, p > .05$ . Correlations between NYT and all of the efficacy variables were low and none was statistically significant ( $Mdn r = .17$ ). For ETs, only one efficacy variable correlated significantly with SRTA: Efficacy to Enlist Parents. In the ST group, four efficacy variables had significant relationships and meaningful correlations with SRTA: Instructional Self-Efficacy, Disciplinary Self-Efficacy, Efficacy to Create a Positive School Climate, and PTE. The two RAND variables did not have meaningful correlations with either NYT or SRTA.

### **Discussion**

In this study, we examined teachers' reports of teaching self-efficacy using the TES (Gibson and Dembo, 1984), the TSES (Bandura, n.d.), and two single items developed by RAND Corporation researchers (Armor et al., 1976; Berman et al., 1977). Results indicated that ETs reported higher self-efficacy scores than STs, with effect sizes in the medium to large range. Scores on most of the subscales resulted in moderate to high reliability estimates. The sole exception was the GTE score from the TES. Intercorrelations among the efficacy subscales were in the low to moderate range, with effect sizes ranging from small to large (Cohen, 1988). The results indicated a modest relationship between NYT and SRTA for STs, and SRTA had significant and meaningful correlations with efficacy variables for both STs and ETs.

#### **Group Differences in Efficacy Scores**

The differences in efficacy scores that were found in this study are substantial and of great interest. Differences were larger on efficacy variables that were more closely tied to classroom practice. For example, on the TES and RAND items, larger effects were obtained for personal

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teaching efficacy than for general teaching efficacy. On the TSES subscales, the two smallest effect sizes were found on Efficacy to Influence School Resources and Efficacy to Enlist Community. Given a centralized education system with no local control of budgets, these results make sense, practically. Moreover, they also make sense from a theoretical viewpoint as teachers have far less control over resources than administrators, even in districts with site-based management systems.

What is not clear from the results is the reason for the differences between the two groups. The differences cannot be due to SES, since the STs reported higher SES scores than the ETs. Both groups also reported comparable experiences in their elementary and secondary education, albeit retrospectively. Only the correlation between NYT and Efficacy to Influence Decision Making approached a medium effect size in both groups (Cohen, 1988; Newton & Rudestam, 1999). It is plausible that teachers who have been at a school site for a longer period of time have greater interpersonal power with administrators; nonetheless, this correlation still accounted for less than 10% of shared variance. The most plausible explanation for the higher efficacy scores of ETs is the fact that they actually received teacher training and the STs did not. If, in fact, the difference is based on receiving and or not receiving teacher training, this study provides a powerful argument for the training of secondary teachers in Trinidad and Tobago, an oft-voiced concern of many educators at UWI.

#### **Reliability Estimates of Scores**

TSES (Bandura, n.d.) scores were generally more reliable than TES (Gibson & Dembo, 1984) scores in this investigation. Even though three of the Bandura subscales are about half the length of the Gibson and Dembo subscales, the former's scores resulted in reliability estimates that were, on average, .12 points higher. These findings support Bandura's (1997) contention that self-efficacy measures should be tied specifically to behaviours that individuals perform in the domain under examination. They also recall the concerns about TES scores raised by several researchers (e.g., Hoy & Woolfolk, 1993; Soodak & Podell, 1993).

### **Intercorrelations Among Self-Efficacy Variables**

The results of the intercorrelations among the efficacy variables also offer more support for the TSES. The RAND items had almost no relationship with each other, and this lack of relationship was also evident between the two TES subscales, suggesting that personal efficacy and outcome expectancy are not related. On the other hand, the TSES subscales had a moderate set of intercorrelations, and were also correlated with the TES and RAND items in ways supported by theory. For example, Instructional Self-Efficacy and Efficacy to Create a Positive School Climate had moderate relationships with both RAND and TES items, suggesting that teachers who believe that they can teach well and control their classroom climate have higher scores on both personal efficacy and outcome expectancy than teachers whose beliefs in this area are less positive. In other words, improving student learning and students' attitudes toward school is dependent on both of the efficacy pillars. Thus, while personal efficacy and outcome expectancy are independent, depending on the tasks involved, both of them may need to come into play.

### **Concurrent Validity of Self-Efficacy Items**

SRTA, in essence a home-made global measure of TE, was significantly correlated to Efficacy to Enlist Parents for ETs, and to four self-efficacy variables for STs: Instructional Self-Efficacy, Disciplinary Self-Efficacy, Efficacy to Create a Positive School Climate, and PTE. All correlations were in the moderate range accounting for between 11 and 15% shared variance. Again, there is no obvious reason for the ST and ET differences. Perhaps given the higher ET scores on the TE variables, SRTA was too general to relate to ETs' efficacy beliefs. Additionally, if ETs' self-efficacy beliefs are determined largely by their previous teacher training experiences, this global measure may be more meaningful in capturing the self-efficacy beliefs of the teachers who did not have teacher training, that is, the STs. Certainly, Bandura's (1997) suggestions would indicate that these more global measures are not particularly useful, and should probably be eliminated from research studies.

Perhaps one of the most important findings in this study is the lack of a relationship between NYT and TE. Moreover, one cannot attribute this finding to restriction of range. The range of years teaching was 7 to 40 for ETs and 1 to 33 for STs, respectively. It is often accepted as a truism that

experience results in increased competence and skill and, concomitantly, belief in the ability to complete the task. This study's findings do not support this belief. A question that is often asked in workshops with educators and psychologists goes as follows: Do you have multiple years of experience, or do you have one year of experience multiple times? This study suggests that the answer is the latter. Moreover, the pattern is the same for both the trained and untrained teachers, suggesting that teacher training at the beginning of one's career does not guarantee professional growth during the career.

Three years ago, the School Leadership Center of Trinidad and Tobago was formed. The stated mission of the Center is to improve the teaching and learning in Trinidad and Tobago through reflective practice. Bandura (1997) also noted that self-efficacy beliefs could only be changed through reflection. The results of this study suggest that ongoing professional development is another critical need for teachers in Trinidad and Tobago. This hypothesis is supported by the response to the 2002 Summer Institute of the School Leadership Center, where the most frequent request of teachers was the need for more teacher training in classroom management and instruction (Worrell, 2003).

### **Limitations**

As with all studies, this one suffered from a number of limitations. Some of the limitations revolve around the sample. Although participants were from all the educational districts in Trinidad and Tobago, the sample was not randomly selected and may not be representative of the population of teachers. A second concern had to do with the uneven numbers in the two groups. Although both the *t*-test and the correlation coefficient are robust under conditions of unequal sample size, the imbalance in the sample's groups is less than ideal. Third, participants were allowed to complete the surveys at home and return them to class. This option can result in individuals comparing responses and render some of the responses non-independent, violating another assumption of many of the statistical analyses. A final limitation is related to the finding that ETs have higher self-efficacy scores than STs. To determine if this finding is actually related to teacher training will require a sample which has both trained and untrained ETs as well as trained and untrained STs, so that we can examine the contributions of training and teacher assignment (i.e., elementary versus secondary) without these variables being confounded.

To further complicate the trained/untrained dichotomy, within the Trinidad and Tobago context, there also exists the possibility of teachers using their training for elementary teaching to gain university matriculation for a first degree. If they decide to teach afterward, they may then be placed at the secondary level without further training for secondary teaching. This would therefore create additional categories of teachers to be studied in future research: those who are untrained, appropriately placed for training, and inappropriately placed for training.

### **Conclusion**

In this study, we examined the construct of TE in a sample of elementary and secondary school teachers in Trinidad and Tobago. The results of the study indicate that the self-efficacy construct seems to be a viable one in Trinidad and Tobago, as it is in many other parts of the world (Scholz, Doña, Sud, & Schwarzer, 2002). Scores on both the TES (Gibson & Dembo, 1984) and the TSES (Bandura, n.d.) resulted in moderate to high reliability estimates. The study's results support Bandura's (1997) contention that self-efficacy is best measured by domain-specific rather than general items, as scores on the TSES resulted in higher reliability estimates than scores on the TES. The results of the study also strongly suggest that teacher training may benefit secondary school teachers by increasing their teaching self-efficacy, which should result in an increase in teaching effectiveness. However, this finding needs to be addressed in other studies. The results also hint at the need for ongoing professional development, as there was no relationship between years teaching and teaching self-efficacy. Although Bandura did not suggest it, the pattern of intercorrelations among TSES subscale scores may indicate a set of factors underlying the items, and the scores should be factor-analyzed to examine this hypothesis. Finally, future research should examine the relationship of TE and student achievement to see if this relationship is as robust in Trinidad and Tobago as it is in other countries.

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