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UNDERSTANDING TEACHERS' EFFICACY WITHIN A CARIBBEAN CONTEXT

Loraine D. Cook

This study examined the validity and reliability of a modified version of the *Teachers' Sense of Efficacy Scale* developed by Tschannen-Moran & Woolfolk Hoy in 2001. A principal component analysis using oblimin rotation was performed on data collected from 905 classroom teachers drawn mainly from primary and secondary schools in Jamaica. Results of the analysis identified two dimensions: personal teaching efficacy and classroom management. Cronbach's alphas of the dimensions ranged from 0.646 to 0.854. The results also showed that school type, gender, and teacher status in the school organization had small but significant influence on the levels of participants' teacher efficacy.

Introduction

Teachers' confidence in their ability to teach and to effect change in their students' academic performance and behaviour is critical to teachers' success or failure in the classroom (Tschannen-Moran & Woolfolk Hoy, 2001). Teacher self-efficacy (TSE) predicts teachers' belief in their effectiveness in the class, their professional behaviour, and value for students' outcomes (Ross & Bruce, 2007). Teacher efficacy predicts teachers' influence on student achievement (Richardson, 2011); teachers' flexibility to change in the curriculum and adoption of innovation (Charalambous & Philippou, 2010); teachers' efforts in preparing lesson plans (Pan, Chou, Hsu, Li, & Hu, 2013); and teachers competency in classroom management (Tschannen-Moran & Woolfolk Hoy, 2001).

Several measurement instruments have been developed to assess teacher efficacy (Brouwers & Tomic, 2003; Denzine, Cooney, & McKenzie, 2005; Tschannen-Moran & Woolfolk Hoy, 2001). The early instruments were guided by Rotter's social learning theory of locus of control (1966). This theory postulated that teachers who felt overwhelmed to influence change in students' learning and who considered student outcomes outside of their control were external in their locus of control orientation. Conversely, teachers who were confident that they could motivate and bring about change in difficult students were internal in their locus of control orientation.

Researchers at the Rand Corporation were the first to research teacher efficacy (Tschannen-Moran & Woolfolk Hoy, 2001). Their study identified two dimensions to the teacher efficacy construct: general teaching efficacy and personal teaching efficacy. Statements on the instrument measuring environmental factors likely to overwhelm a teacher's power to influence students' learning were clustered under the label *general teaching efficacy*. Items indicating the teacher's belief in his or her ability to overcome factors that could make learning difficult for students were grouped under the label *personal teaching efficacy* (Brouwers & Tomic, 2003). Denzine, Cooney, and MacKenzie (2005) noted that general teaching efficacy assessed teachers' outcome expectations, while personal teaching efficacy is based on teachers' judgements of their ability to influence student learning.

Historically, Rotter's (1966) locus of control and Bandura's (1977) social cognitive theory and construct of self-efficacy influenced the development of teacher efficacy. Bandura purported that self-efficacy is an individual's belief that he or she can organize and execute the courses of action required to produce certain outcomes. Several measures of efficacy underpinned by Bandura's principles were subsequently developed, with the most widely used being the *Teacher Efficacy Scale* developed by Gibson and Dembo (1984) (Tschannen-Moran & Woolfolk Hoy, 2001). Other measures included: *Ashton Vignettes* instrument (1984), which was developed to make judgements on teachers' efficacy in dealing with common situations that a teacher might encounter in the classroom (Tschannen-Moran & Woolfolk Hoy, 2001); Bandura's *Teacher Self-Efficacy Scale* (1990) (Tschannen-Moran & Woolfolk Hoy, 2001); and the *Teachers' Sense of Efficacy Scale* (TSES), developed by Tschannen-Moran and Woolfolk Hoy in 2001. This research focused on adapting TSES in a Caribbean context, and examining teacher efficacy among teachers across various school types.

Dimensions of Teacher Efficacy

A number of factorial validity investigations of the Gibson and Dembo scale confirmed two dimensions: personal teaching efficacy and general teaching efficacy (Tschannen-Moran & Woolfolk Hoy, 2001). Similar to Rand, the dimension *general teaching efficacy* captured outcome expectancy, and *personal teaching efficacy* reflected self-efficacy, or a teacher's perceived ability to positively impact student learning (Tschannen-Moran & Woolfolk Hoy, 2001). Teachers who score high on these dimensions are expected to be confident teachers. Conversely, teachers who score low would be less determined and more disposed to

give up quickly. Emmer and Hickman (1990) adapted the Gibson and Dembo instrument by adding items to include teacher efficacy in classroom management (Tschannen-Moran & Woolfolk Hoy, 2001). Tschannen-Moran and Woolfolk Hoy (2001), using factor analysis, generated the following three dimensions of their TSES: efficacy in student engagement, efficacy in instructional strategies, and efficacy in classroom management. Roberts and Henson (2001) recommended the elimination of classroom management from the Tschannen-Moran and Woolfolk Hoy scale—the Ohio State Teacher Efficacy Scale (OSTES—following a confirmatory factor analysis where their results showed a strong two-factor model once classroom management was removed.

Teacher efficacy is related to the innovative utilization of the curriculum. Teachers with lower teacher efficacy scores (TES) were less likely to accommodate curriculum change and reform because they were less willing to move beyond their "comfort and safe zone" (Charalambous & Philippou, 2010, p. 14). Teachers with higher TES spend more time planning learning objectives and content than teachers with lower self-efficacy (Pan et al., 2013).

Studies revealed that teacher efficacy is a potent predictor of teachers' willingness to implement new instructional strategies. These findings suggest that teachers who are flexible in their teaching strategies are usually high in their teaching efficacy. Flexibility, or willingness to try new instructional strategies, is an important element in differentiation teaching, which makes it more likely that individual students' needs are met in the teaching-learning process (Cook, 2012; Leikin & Dinur, 2003).

Several studies show significant differences in teachers' efficacy in relation to the teaching of low achievers (Alderman, 1990; Soodak & Podell, 1996). Teachers who were successful in helping low-achieving students blended high levels of self-efficacy with realistic expectations for student achievement. Such teachers tended to make more teacher-based suggestions and had greater confidence in their abilities to effect change in their students than teachers who practised more non-teacher-based decisions and had lower levels of teacher efficacy (Soodak & Podell, 1996). Teachers who were less likely to seek solutions to the problems of difficult students outside of the classroom were more confident that they could influence change in their students (Alderman, 1990; Soodak & Podell, 1996).

Factors Influencing Teacher Efficacy

Research is not conclusive on the influence of variables such as teachers' age, gender, length of service, and status in the school hierarchy on teacher efficacy (Ignat & Clipa, 2010; Pan et al., 2013; Penrose, Perry, & Ball, 2007; Ross & Bruce, 2007; Yeo, Ang, Chong, Huan, & Quek, 2008). Yeo et al.'s (2008) study revealed that gender and length of service did not have an impact on their participants' teacher efficacy. Similarly, Penrose et al. (2007), in citing research by Tschannen-Moran & Woolfolk Hoy (2002), reported that using the TSES yielded no significant differences in age or gender. In addition, Penrose et al.'s results showed that teachers with more than 15 years of professional experience had a stronger sense of teacher efficacy than teachers with less than five years experience. Their study also suggests a positive relationship among teachers' expertise as professionals, their status in the school hierarchy, and their teacher efficacy. Similarly, Ignat and Clipa (2010) reported stronger levels of teacher efficacy as teachers' length of service increased. This finding was further confirmed by Pan et al.'s (2013) results, which indicated that teachers with high teacher efficacy had more experience, knowledge, and skills than those with low TSE.

Ross and Bruce (2007) designed a professional development programme to improve the efficacy of mathematics teachers, which involved 106 Grade 6 mathematics teachers. This method allowed the teachers to observe their effect on students' achievement, judge how well they attained their instructional goals, and reflect on their satisfaction. The TSES instrument, which has the following three domains, was used to determine teachers' efficacy:

- Efficacy for engagement – how much a teacher can motivate students who exhibit low interest in mathematics
- Efficacy of teaching strategies – how well a teacher can implement alternative mathematics strategies in the classroom
- Efficacy for classroom management – how much a teacher can calm a student who is disruptive or noisy during a mathematics class

Treatment teachers outperformed control group teachers on three measures of teacher efficacy—efficacy for engagement, efficacy of teaching strategies, and efficacy for classroom management—but results were statistically significant only for efficacy for classroom management. The authors felt that the result was influenced by the emphasis on classroom management during the professional development intervention.

Teachers exposed to training and professional support are likely to have higher levels of efficacy in the classroom. Woolfolk Hoy (2000) reported

higher levels of efficacy for teachers during training until they assumed full professional responsibility for a class. Woolfolk Hoy noted that when support was not available, teacher efficacy fell. Teacher efficacy for preservice teachers improved in Yeh's (2006) study following an intervention using computer simulated training. Yeh concluded that personal qualities such as analytical learning, self-awareness, and critical thinking interacted with guided practices and reflective teaching to bring about improvement in preservice teachers' efficacy.

School context and support systems can influence teachers' efficacy in the classroom. Teachers in schools with high track records are likely to be more efficacious than fellow teachers in regular schools where there is a greater mix of students with varying abilities (Chong, Klassen, Huan, Wong, & Kates, 2010); high-track schools have more resources and students are less challenging than those in the low-track schools.

The purpose of this study was to examine the reliability and validity of a modified version of Tschannen-Moran and Woolfolk Hoy's (2001) TSES, and assess the extent to which gender, school type, years of service, and teacher status in the school's hierarchical system influenced teacher efficacy. The following research questions were asked:

1. *What are the dimensions of the modified "Teachers' Sense of Efficacy Scale"*?
2. *Is there a relationship among the dimensions*?
3. *What is the impact of teachers' professional position in a school, length of service and school type on teacher efficacy?*

The study will assist other investigators of teacher efficacy in the Caribbean context in examining teacher efficacy, and in developing valid and reliable instruments in the Caribbean. The teacher efficacy instrument was modified to make the items more relevant to the context where the participants received their teacher training. Subsequently, factor analysis was generated to determine the factor structure of the modified instrument, and to ascertain whether the factor structure of the modified instrument is consistent with the theories that underpin the teacher efficacy construct.

Context of the Research

The formal school system in Jamaica is comprised of early childhood, primary, secondary, and tertiary levels. The schools are mainly in the public sector with limited private sector participation. Secondary schools are categorized as traditional or non-traditional. Traditional schools are grammar-type high schools established in the 1850s. Students who attend

these schools are selected mainly from the middle- and upper-income groups. The non-traditional schools are the new secondary schools established in the 1940s. The student population for these schools is from lower-income families. Students are placed in high schools after completing six years of compulsory education at the primary level, based on their grades in a national examination. Students selected to attend the traditional high schools attain pass marks of 80% and over in the national examination, while those selected for the non-traditional high school gain scores below 80%. Student selection for the non-traditional high schools is based on their performance on the national exam and, for the most part, a large percentage of the students who performed below 80% are from lower-income families. Prior achievements, therefore, determine the school type at the secondary level. Despite the report in 2009 that 85% of the teachers were trained professionals (attended teachers' college or university and obtained a diploma or degree in education), several schools still experience shortages of skilled teachers due to migration (Caribbean Policy Research Institute [CAPRI], 2012).

Method

Participants

A total of 905 classroom teachers selected from various school types across Jamaica participated in this research. The teachers indicated their position in the school on the questionnaire: 58% of the participants were subject teachers; 20% were senior teachers; and 21% were in administrative positions. Using Penrose et al.'s (2007) classification of high-status and low-status position in the school system, the subject teachers are classified as low status in the school system in the context of this study. The senior teachers and those in administrative positions (e.g., principal and vice-principal) are classified as being in the high-status position in the school system. Only 1% of the participants did not respond to the questionnaire. A multi-stage sampling technique was utilized, and at Stage 1, schools within four school types were selected: traditional high schools, non-traditional high schools, basic schools, and primary schools. At Stage 2, teachers were drafted using quota sampling, guided by the principle of population proportionate to size.

The majority of the participating teachers (48.3%) taught at the primary level (n = 702); 12% taught in traditional high schools (n = 128); 17% taught at non-traditional high schools (n = 182); and 3% in basic schools (n = 30). Basic schools are for children from 2 to 6 years of age.

Procedure

The teachers' efficacy instrument used in this study was an adaptation of Tschannen-Moran and Woolfolk Hoy's (2001) Teachers' Sense of Efficacy Scale (TSES). The scale was modified by the author and two other experts from the School of Education at The University of the West Indies (UWI) for content validity. On the understanding that the modifications made the scale more contextually relevant to the curriculum at the teacher training institutions, the following three items were added to the original instrument:

1) I feel competent and confident to deliver the content of my subject area
2) I feel that I can cope with violent and aggressive students
3) I feel confident that I can influence the development of a student
4) I feel confident that I can research any problem in my teaching and arrive at a solution

Item 1 was included to determine teachers' efficacy in their subject matter. Dewey (1944) noted that teachers must know their content area very well to be able to give attention to other important matters, such as students' attitude and disposition during the teaching-learning sessions, "when engaged in the direct act of teaching, the instructor needs to have a subject matter at his fingers end…" (p. 183). Teachers lacking knowledge in their content area are likely not to be confident in having a holistic approach to their teaching.

The inclusion of Item 2 is supported by the Caribbean Policy Research Institute (CAPRI, 2012), which reported that violence and aggression in schools was one of the factors influencing teachers' migration to other countries. This ongoing issue has led to the inclusion of a course on violence aggression in the teacher training curriculum. Item 3 reflects the inclusion of action research in the teacher training curriculum. Action research was introduced in the teacher training curriculum to empower teachers to identify and solve problems they encounter in the classroom.

Items 3 and 4 are included because the training of teachers at the tertiary institution emphasized action research. All students must carry out an action research project and submit a report by the end of the second semester of their final year. Therefore, it is important to assess how confident the students are in carrying out action research in their practice.

The modified instrument consists of 21 items (see Appendix). The format of the response was changed from the 9-point rating scale to a dichotomous scale of *Agree* or *Disagree*. Respondents were required to indicate to what extent they agree or disagree using a weighting 1-10 (1 *very little* up to 10 *total agreement or disagreement*). All statements were

positive. If the respondent agreed with the statement, a positive score was indicated and if the respondent disagreed, a negative score was reflected. The Cronbach Alpha measurement for the instrument revealed a high internal consistency of 0.852.

Official permission was obtained from the principals of the participating schools. Undergraduate students were employed as research assistants to collect data in all six educational regions of the island, using copies of the instruments.

Results

Initially, the factorability of the 21-item teacher efficacy instrument was examined using the Kaiser-Meyer-Oklin of sampling adequacy and the Bartlett's test of sphericity. The Kaiser-Meyer-Oklin measure of sampling adequacy was .931 above the recommended value of 0.6, while Bartlett's test of sphericity was a significant X^2 (210) = 5581.91, $p < .05$. Finally, the communalities for the 21 items were not all above .3. Six of the 21 items had communalities below 0.3; after removal of the six items, the communalities were generated again and all 15 items had communalities above 0.3.

Principal components analysis (PCA) was used because the primary purpose was to identify and compute the factors underlying the modified teacher efficacy instrument. The initial eigen values showed that the first factor explained 34.51% of the variance, and the second factor 9.2% of the variance. The two factor solutions were examined, using both varimax and oblimin rotations of the factor loading matrix. The two-factor solution, which explained 43.71% of the variance, was preferred because of the "leveling off" of eigenvalues on the scree plot after two factors, and the results from the parallel analysis using Monte Carlo (see Table 1). There was little difference between the varimax and oblimin solutions (see Table 2).

Table 1. Comparison of Eigenvalues From PCA and Criterion Value From Parallel Analysis

Component Number	Actual Eigenvalue From PCA	Criterion Value From Parallel Analysis	Decision
1	5.176	1.2793	Accept
2	1.376	1.2313	Accept
3	0.923	1.1933	Reject

All items had primary loadings over .4. The pattern and structure matrix for PCA with oblimin rotation for two-solution is presented in Table 2. The factor labels are *personal teaching efficacy* (Factor 1 with 11 items); and *classroom management* (Factor 2 with four items (see Table 2). The two-factor solution explained 43.71% of the variance. The modified instrument, therefore, reflected two dimensions: flexibility and classroom management

Personal teaching efficacy (PTE) (Factor 2): Personal teaching efficacy refers to a teacher's belief that he/she has the competence and skills to influence student learning (Denzine et al., 2005; Yeh, 2006) (see Table 2). PTE involves the teacher agreeing or disagreeing with the statements about their confidence in their abilities as teachers to "overcome factors that could make learning difficult for a student" (Tschannen-Moran & Woolfolk Hoy, 2001, p. 785). On the modified instrument, the teachers responded to 11 statements concerned with "the efficacy of their teaching." The items within this factor yielded a Cronbach Alpha of 0.854.

Classroom management (Factor 4): Emmer and Hickman (as cited in Denzine et al., 2005) argue that classroom management/discipline efficacy is distinct from the other categories of teacher efficacy. The item with the highest load for the classroom management factor reads: "I feel that I can cope with violent and aggressive students" (see Table 2). The items within this factor yielded a Cronbach Alpha of 0.646.

Table 2. Pattern and Structure Matrix for PCA With Oblimin Rotation for Two-Factor Solution

Items	Personal Teaching Efficacy		Classroom Management		Communalities
	Pattern	Structure	Pattern	Structure	
4. I feel competent to craft good questions for students to think critically	**0.651**	**0.633**	-0.046	0.201	0.403
21. I feel confident that I can research any problem in my teaching and arrive at a solution	**0.635**	**0.616**	-0.05	0.192	0.382

Items	Personal Teaching Efficacy		Classroom Management		Communalities
	Pattern	Structure	Pattern	Structure	
5. I can now implement alternative strategies in my classroom	**0.628**	**0.628**	0.002	0.240	0.395
6. I feel competent to respond to challenging questions from my students	**0.620**	**0.621**	0.002	0.238	0.386
18. I feel confident that I can help students think critically	**0.588**	**0.612**	-0.063	0.286	0.378
19. I feel confident that I can foster student creativity	**0.710**	**0.694**	-0.041	0.229	0.483
20. I feel confident that I can influence the development of students	**0.702**	**0.682**	-0.052	0.215	0.468
10. I feel competent to control disruptive behaviour in the classroom	-0.036	0.260	**0.776**	**0.763**	0.583
11. I feel I can establish a classroom management system with each group of students	0.173	0.404	**0.610**	**0.675**	0.482
12. I feel that I can cope with violent and aggressive students	-0.105	0.202	**0.807**	**0.767**	0.598
13. I feel confident to make my expectations clear about students' behaviour	0.387	0.530	**0.337***	**0.524**	0.403
14. I feel confident that I can get students to believe that they can do well at their school work	**0.612**	**0.612**	0.000	0.233	0.375

Items	Personal Teaching Efficacy		Classroom Management		Communalities
	Pattern	Structure	Pattern	Structure	
15. I feel confident that I can motivate students who show little interest in their school work	**0.647**	**0.665**	0.049	0.295	0.445
17. I feel confident that I can help students who are failing in their school work	**0.625**	**0.648**	0.060	0.298	0.424
1. I now feel competent and confident to deliver the content of my subject area	**0.589**	**0.592**	0.007	0.231	0.350

*Even though this item loaded the lowest on classroom management, subsequent qualitative examination confirmed that this item is most appropriately assigned to classroom management.

When the relationships between the factors were examined it was observed that both factors significantly correlated with each other ($r = 467$, $p < .01$) (see Table 3).

Table 3. Correlation Matrix of Factors

		Personal Teaching Efficacy	Classroom Management
Personal Teaching Efficacy	Pearson Correlation	1	.467**
	Sig. (2-tailed)		.000
	N	956	956
Classroom Management	Pearson Correlation	.467**	1
	Sig. (2-tailed)	.000	
	N	956	956

Note: **Correlation is significant at the 0.01 level (2-tailed)

As shown in Figure 1, the distribution of the teachers' efficacy scores is negatively skewed, indicating a clustering of scores at the high end of the graph. This indicates that, overall, the level of teachers' efficacy in this study had a tendency towards the upper end of the scale (see Figure 1).

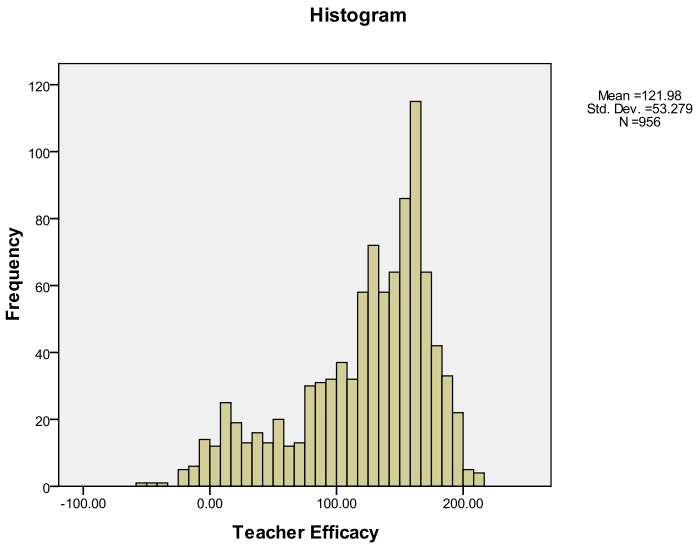

Figure 1. Distribution of the overall teacher efficacy scores.

Teacher Efficacy Across Gender, School Position, Years of Service, and School Type

In Table 4, one can observe differences in means and standard deviations for teacher efficacy scores based on the independent variables (teachers' professional position in schools, years of service, and school type). The ANOVA results indicate significant differences on teacher efficacy scores based on school types (p<.001: F (4,10117) = 6.67, p = <.001). Games-Howell post hoc evaluations indicated a difference between primary and basic schools. Teachers in primary schools had the lowest mean value for teacher efficacy, while basic school teachers had the highest. Similarly, there were significant differences in teacher efficacy based on teachers' professional position in the schools (F (6,1000) = 5.28, p≠.001). However, the Games-Howell post hoc evaluation did not identify differences between the groups. No significant difference was found in teacher efficacy scores based on years of service and - p>.05: F (2, 998) = 2.68, p=.069.

Table 4. Teacher Efficacy According to School Type, School Position, and Years of Service

Independent Variable	Teacher Efficacy Score		F	η^2
School Position	***Mean***	***SD***		
Education Officer	74	86.2	5.28***	0.031
Principal	77.2	62.8		
Vice-Principal	54.5	63.2		
HOD	106.5	65.5		
Senior Teacher	111.8	53.5		
Grade Coordinator	121.6	47.7		
Subject Teacher	121.5	46.7		
Years of Service				
Over 10 Years	74	86.2	2.68	0.005
5-10 Years	77.2	62.8		
Under 5 Years	54.5	63.2		
School Type				
Basic	110.4	62.1	7.01***	0.021
Primary	122	48.1		
Non-Traditional	105	55.2		
Traditional	107.3	53.5		

Note. * = $p \leq .05$, ***=$p \leq .001$.

The magnitude of the differences in the mean (mean difference = 8.42, 95% CI: 1.3 to 15) was very small (eta squared = .011). Extreme positive values in teacher efficacy were associated with teachers from the traditional high schools and primary schools (scores ranged from 206 to

210), whereas negative values in teacher efficacy were associated only with teachers from non-traditional high schools (scores ranged from -24 to -58) (see Table 5).

Additionally, as shown in Table 5, with equality of variance violated, there was a significant difference in scores for males (M = 119.5, SD = 48.9) and females (M = 111.101, SD = 54.5; *t* (1000) = 2.45, p = .019 (two tailed) (see Table 6).

Table 5. Extreme Values of the Five Highest and Five Lowest Scores

			Case Number	Value	Sch. Type
Teacher Efficacy	Highest	1	12	210.00	Traditional
		2	94	210.00	Primary
		3	316	210.00	Primary
		4	341	210.00	Primary
		5	477	206.00[a]	Primary
	Lowest	1	727	-58.00	Non-traditional
		2	505	-48.00	Non-traditional
		3	715	-34.00	Non-traditional
		4	256	-24.00	Non-traditional
		5	181	-24.00	Non-traditional

Note: [a] Only a partial list of cases with the value 206.00 are shown in the table of upper extremes.

Table 6. Mean Scores and SD of Teacher Efficacy by Gender

	Gender		*T*	*df*
	Male	**Female**		
Mean Score	119	111	2.44**	1000
	(48.9)	(54.5)		

Note. * = $p \leq .05$, ** = $p \leq .001$. Standard deviations appear in parentheses below means.

Discussion

This research found that teachers in higher status positions had lower efficacy than those who held lower positions in the schools' hierarchy. This is not surprising, as in the Jamaican context, vice-principals and principals focus on administrative duties and school policies. This especially holds true in the high schools where the principals and vice-principals, after promotion from the rank of classroom teacher to principal, tend to become distant from classroom instruction. This leaves instruction largely in the hands of the heads of departments, senior teachers, grade coordinators, and subject teachers.

With regard to the position of teachers in the school organizational structure, the results showed a small, significant impact on teacher efficacy. According to the results in Table 3, the mean values (TES) for teachers in the following positions were: Education Officers = 74, principals = 77.2, vice-principals = 55.4, and senior teachers =111.8; senior teachers TES were much higher than teachers in the other positions. Penrose et al. (2007) found that teachers' status or position in the school organizational structure does have significant effects on teachers' efficacy. In their investigation, principals and vice-principals were categorized as high-status positions, while heads of departments, senior teachers, grade coordinators, and subject teachers were considered lower status positions. The posthoc results from this study did not concur with those of Penrose et al. (2007). Their findings revealed that the mean for teachers in lower status position was, for example, (M = 66.14, SD = 9.33) statistically different from both leading teachers (M = 76.84, SD = 9.49) and principals (M = 78.00, SD = 7.25). The difference between Penrose et al.'s findings and those reported in this study may be due to the different cultural contexts and structure of the educational settings of the two studies.

The cumulative explained variance was 43.71%, and the best model was a four-factor one, with loadings between 0.33 and 0.807. The items did not cluster into the well-defined dimensions that Tschannen-Moran and Woolfolk Hoy (2001) observed in their original scale: efficacy of instructional strategies, efficacy for classroom management, and efficacy for student engagement. Instead, the dimensions were relabelled *personal teaching efficacy* and *classroom management*. Note the retention of one of the original labels from Tschannen-Moran and Woolfolk Hoy—classroom management.

Tschannen-Moran & Woolfolk Hoy (2001) noted that statements on PTE "reflect confidence that they have adequate training or experience to develop strategies for overcoming obstacles to student learning. These teachers may well have experienced past success in boosting students'

achievement" (p. 785). On the modified instrument, items measure teachers' confidence in the delivery of the subject content, the utilization of various teaching and assessment techniques in the delivery process of teaching, and the use of research in the classroom to facilitate better teaching and learning.

A teacher must be very confident in his/her subject content in order to be able to pay attention to how students' attitude and response (student's need and capacities) interplay with the teaching of the content (Dewey, 1944). When the teacher can observe this interplay, then he or she can develop strategies for overcoming obstacles to student learning and, by implementing alternative strategies (Item 5), feel competent to provide appropriate challenges for exceptional students (item 9), foster students' creativity (Item 19), and feel confident about influencing students' development (Item 20).

Classroom management items measure the teachers' confidence in using behavioural strategies to encourage and increase desirable students' behavioural responses. Classroom management was added to the Gibson and Dembo efficacy scale by Emmer and Hickman in 1990, who adapted the instrument (Tschannen-Moran & Woolfolk Hoy, 2001). Also, Tschannen-Moran & Woolfolk Hoy identified this dimension as an important dimension on their scale—Ohio State Teacher Efficacy Scale (OSTES). Based on Roberts and Henson's (2001) concerns regarding the low loadings on the classroom management factor, Tschannen-Moran & Woolfolk Hoy responded by stating:

> we suspected that the weakness of the management factor might be the consequence of the brevity of the 3-item scale. So, rather than eliminate this scale, we decided to write more items to capture this potentially important dimension of teacher efficacy. (p. 798)

There were significant differences in teacher efficacy based on gender, school type, and teacher position in the organizational structure. Although the context of the study differs, the results give support to the findings of Chong et al. (2010) that teacher efficacy varied with school type. Chong et al. found that high-efficacy teachers were associated with high-performing students while low-efficacy teachers were linked with low-performing schools.

Conclusion

In summary, the factor analysis yielded useful information. It identified the underlying dimensions of the modified teacher efficacy scale: personal teacher efficacy and classroom management. The two factors align with

the literature: classroom management as a dimension of teacher efficacy was identified by Tschannen-Moran & Woolfolk Hoy (2001); personal teacher efficacy identified by Gibson and Dembo (as cited by Tschannen-Moran & Woolfolk Hoy, 2001). Exciting possibilities for teacher training in the Caribbean lie ahead as researchers continue to examine the effects of teachers' beliefs on their practices, and to examine the influence of variables such as school type, gender, and teachers' professional position in schools on teachers' confidence to teach and affect students' learning.

For future research, it is suggested that the number of items for the classroom management factor could be increased. This would improve on the present Cronbach Alpha results and increase the factor loadings. Future research could also involve the investigation of the impact of the independent variables (gender, school type, and teachers' professional position in the school) on the two factors of teacher efficacy identified in this study.

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Appendix

Modified Teacher Efficacy Instrument

Below are some statements about how you feel regarding the impact of your training in the Department of Educational Studies (UWI) on your professional development as a teacher. For each statement please show if you **Agree or Disagree (by circling the A or D**) and then indicate to what extent Agree or Disagree; 1-10 (1 very little up to 10 total Agreement or Disagreement).

Since my training: For Example:	A	D___6__
1. I now feel competent and confident to deliver the content of my subject area	A	D _____
2. I can now use a variety of assessment strategies	A	D _____
3. I am more competent to provide alternative explanation or example when students are confused	A	D _____
4. I feel competent to craft good questions for students to think critically	A	D _____
5. I can now implement alternative strategies in my classroom	A	D _____
6. I feel competent to respond to challenging questions from my students	A	D _____
7. I can now adjust my lessons to the proper level for individual students	A	D _____
8. I feel competent to gauge students comprehension for what I have taught	A	D _____
9. I feel competent to provide appropriate challenges for exceptional students	A	D _____
10. I feel competent to control disruptive behaviour in the classroom	A	D _____

11. I feel I can establish a classroom management system with each group of students	A	D _____
12. I feel that I can cope with violent and aggressive students	A	D _____
13. I feel confident to make my expectations clear about students behavior	A	D _____
14. I feel confident that I can get students to believe that they can do well at their school work	A	D _____
15. I feel confident that I can motivate students who show little interest in their schoolwork	A	D _____
16. I feel confident that I can assist families in helping their children do well in schoolwork	A	D _____
17. I feel confident that I can help students who are failing in their schoolwork	A	D _____
18. I feel confident that I can help students think critically	A	D _____
19. I feel confident that I can foster student creativity	A	D _____
20. I feel confident that I can influence the development of students	A	D _____
21. I feel confident that I can research any problem in my teaching and arrive at a solution	A	D _____