

# Relationships among Secondary School Teacher Multicultural Education Beliefs, Perceived Multicultural Education Praxis, Gender and Workshop Attendance

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## Abstract

This study examined the relationships among secondary school teacher perceptions of multicultural education belief (MCEB), multicultural education praxis (MCEP), teachers' gender, ethnicity, and attendance of multicultural education (MCE) workshop. The participants were 464 secondary school teachers from central Taiwan. Descriptive statistics, *t*-test, product moment correlation, and multiple regressions were applied to analyze the data. The analytical results showed that significant differences were found between teachers' gender and attendance of MCE workshop. A positive and significant correlation between perceived MCEB and MCEP, *i.e.*, perceived MCEB could predict perceived MCEP. At levels of teaching strategy, learning assessment, classroom management, and overall, the MCEB dimension, special need was the strongest predictor of perceived MCEP. At curriculum design level, ethnicity and special need were the best predictors of perceived MCEP. Teachers' attendance of MCE workshop could significantly predict perceived MCEP at levels of teaching strategy, curriculum design, learning assessment, classroom management, and overall. However, perceived MCEB could not be predicted from teacher's gender.

**Keywords:** multicultural education belief, multicultural education praxis, secondary school teachers

## 1. Introduction

The 21st Century has been characterized by globalization, an ongoing process of intensified economic, social, and cultural exchanges. Globalization is challenging to schools in multiple ways (Suárez-Orozco & Sattin, 2007). Students in classrooms today have diverse racial, ethnic, linguistic, socio-economic, gendered, religious, and cultural backgrounds. As globalization continues, student diversity will continue to increase worldwide, such that teachers and schools face many challenges in providing each student with the same opportunities to achieve at his or her potential (Ambe, 2006; UNESCO, 2004). Moreover, regardless of gender, ethnicity, social class, cultural roots, or special needs, students must develop accepting racial and ethnic attitudes, such that they can function effectively in culturally diverse democratic societies (Banks, 2004).

Multicultural education (MCE), an educational reform movement emerged in the 1960s and 70s in response to ethnic revitalization movements and immigration in Western nations. The primary aim of MCE is structure schools, colleges, and universities so students from diverse racial, ethnic, cultural, linguistic, and religious groups, as well as social classes, will have equal educational opportunities, and develop democratic attitudes that make them rethink and revise their identities (Banks, 2004; Fullinwider, 2001). In the 1970s and 80s, MCE, especially within the USA, has been given to issues related to gender and social class (Banks, 2004).

Perkins (2012) noted the two major goals of multiculturalism are to enable service providers to recognize, accept, and appreciate differences in culture, ethnicity, social class, sexual orientation, religion, special needs, and gender, and to instill in people a sense of social justice and equality. Williams, Nichols, and Williams (2013) indicated that multicultural awareness and knowledge should not be limited by race, ethnicity, gender, sexual orientation, religious affiliation, mental/physical abilities, and socio-economic status, but is defined as understanding, sensitivity, and appreciation of the history, values, experiences, and lifestyles of groups and individuals.

The main challenge of MCE is the all educational actors work together (Hachfeld, Hahn, Schroeder, Anders, Stanat, Kunter, 2011). Specifically, the multicultural competence of teachers has been considered a key factor when assessing whether schooling successfully teach multicultural perspectives to students. Given their central role in education, teachers have a key function in that, for example, the classroom environment created by teachers can be space where diversity thrives, potentially improving all dimensions of campus life. Peterson and Spencer (1990) showed that a classroom with diversity positively impacts student outcomes, particularly when pedagogy, curriculum design, teaching strategies, learning assessments, and classroom management are considered along with the compositional diversity of students. Many researchers (Ambe, 2006; Banks, 1997; Bennett, 2003; Davidman & Davidman, 2001; Henson, 2004; Manning & Baruth, 2004) have written on how to best modify a curriculum and its teaching materials such that they reflect multiple cultural perspectives, representing the richness of the entire human experience. The academic performances of minority students increase when teachers understand and consider the

students' cultural and ethnic backgrounds, and including family and community sources when developing curricula (Stevenson & Gonzalez, 1992). That is, teachers can maximize the educational benefits of diversity in the classroom via curriculum design and teaching strategies that address diversity and MCE issues (Ndura & Dogbevia, 2013).

A large body of evidence from various countries shows that the beliefs of teachers significantly influence how they plan, organize, and implement their lessons and how responsive they are to their students (Fong & Sheets, 2004; Leonard & Leonard, 2006; McCall, 1995; Montano, Lopez-Torres, & DeLissovoy, 2002; Staub & Stern, 2002; Stipek, Givvin, Salmon, & MacGyvers, 2001), however, little is known about the attitudes, views, and beliefs about cultural diversity of teachers (Vedder, Horenczyk, Liebkind, & Nickmans, 2006). Moreover, measures to improve educational outcomes for learners with diverse backgrounds should be directly linked to teaching practices and the ways in which teachers are trained. The distance between student diversity and homogeneous teaching forces has induced an urgent call for multicultural teacher education to prepare teachers in cultural competence and to work effectively with a diverse student body (National Council for Accreditation of Teacher Education, 2008). Sogunro (2001) has stated that although most teachers are competent in their subject areas, they lack the knowledge, skills and attitudes necessary to successfully teach and manage diverse student populations. Teachers must acquire multicultural competencies that become a deep appreciation for diversity and guide culturally relevant teaching (Ambe, 2006). Evidence also shows that courses or workshops in MCE positively impact on the views of in-service teachers (Edwards & Kuhlman, 2007; Wiggins, Follo, & Eberly, 2007).

As part of a loosely interconnected global system, Taiwan cannot escape influences of globalization on educational innovation. Among the many relevant legislative tools, the revised University Law, Teacher Education Act, and Law of Teacher Union and Teacher Selection are considered particularly significant in restructuring Taiwan's education system (Yang, 2002). The Administrative Guideline for Accreditation of Teacher Education Programs (Ministry of Education, 2002) encourages universities to develop teacher training programs that address diversity in the student population. In response, many universities now offer MCE in their teacher education programs. In-service teachers are also encouraged to attend MCE workshops or programs to cultivate their knowledge, skills and attitudes that are deemed necessary to successfully teach and manage classroom diversity. However, do these workshops positively impact on the views of in-service teachers? This study examines the difference between MCEB and MCEP of secondary school teachers who attend MCE workshops and their secondary school counterparts who never attend an MCE workshop? Moreover, perceived MCEBs and MCEP may be altered by teacher's gender. Thus, determining whether gender affects perceived MCEBs and MCEP in the Taiwanese context is essential. As mentioned, little is known about the attitudes, views, and beliefs about cultural diversity of teachers (Vedder *et al.*, 2006). Therefore, this study examines the relationships among teachers' MCEBs, MCEP, gender and attendance record for MCE workshops. Findings will provide valuable data and enhance the understanding of MCEBs and MCEP in different cultural contexts.

## 2. Methodology

### 2.1. Participants

Four hundred eighty secondary teachers from central Taiwan were invited to complete teacher MCEB and MCEP questionnaires. To ensure confidentiality, each questionnaire was completed anonymously. With a response rate of 96.7%, 464 teachers returned completed questionnaires, including 61.4% female ( $n=285$ ) and 38.6% male ( $n=179$ ). Of whom, 41.4% ( $n=192$ ) had been attended MCE workshop and 58.6% ( $n=272$ ) had not been attended any MCE workshop.

### 2.2. Instruments

#### 2.2.1. Perceived MCEB

The *Multicultural Education Belief Scale* (MCEBS) developed by the authors based on previous studies (Hou, 2010; Tang, 2009; Wen, 2008) was administered to measure what teachers believe about cultural diversity in the classroom using 26 items in five dimensions, namely, pedagogy, gender, ethnicity, social class, and special needs. The first dimension, pedagogy (5 items) identified teachers' attitudes, views, and opinions related to teaching culturally diverse students. The second dimension, gender (4 items) measured the teachers' attitudes, views and opinions related to gender equality. The third dimension, ethnicity (4 items) measured teachers' attitudes, views, and opinions related to equality among ethnicities. The fourth dimension, social class (6 items) assessed teachers' attitudes, views, and opinions related for different social-economic classes. The fifth dimension, special needs (7 items) identified teachers' attitudes, views, and opinions related to students with special needs, including mental and physical needs. Teachers responded to the items on a five-point Likert scale, ranging from 1 for "strongly disagree" to 5 for "strongly agree".

The factor analysis made on data obtained by MCEBS in the current application reveals that the value of composite reliability (CR) is .86 and the value of average variance extracted is .56, indicating good validity of the items within this scale. The overall internal consistency (Cronbach's  $\alpha = .93$ ) for the scale in the current sample was good. The Cronbach's  $\alpha$  for the five subscales ranged from .76 to .90, indicating good internal consistencies of the items within each subscale.

#### 2.2.2 Perceived MCEP

Another research instrument, the *Perceived Multicultural Education Praxis Scale* (MCEPS), was developed by the authors based on previous studies (Hou, 2010; Tang, 2009; Wen, 2008). This 28-items scale measures how teachers respond to and deal with cultural diversity via four dimensions: teaching strategy, curriculum design, learning assessment, and classroom management. The first dimension, teaching strategy (7 items), was assessed teachers' perceptions of teaching strategies for students of different genders, ethnicities, social classes, and abilities. The second dimension, curriculum design (7 items) identified teachers' perceptions of curriculum design for students of different genders, ethnicities, social classes, and abilities. The third dimension, learning assessment (7 items) identified teachers'

assessment methods for students of different genders, ethnicities, social classes, and abilities. The fourth dimension, classroom management (7 items) measured teachers' classroom management strategies for students of different genders, ethnicities, social classes, and abilities. Teachers responded to the items on a five-point Likert scale, ranging from 1 for "strongly disagree" to 5 for "strongly agree".

The factor analysis made on data obtained by MCEPS in the current application reveals that the value of composite reliability (CR) is .85 and the value of average variance extracted is .59, indicating good validity of the items within this scale. The overall internal consistency (Cronbach's  $\alpha = .88$ ) for the scale in the current sample was good. The Cronbach's  $\alpha$  for the four subscales ranged from .76 to .89, indicating good internal consistencies of the items within each subscale.

### 2.3. Data analysis

The statistical program SPSS 20.0 for windows was used for data analysis. First of all, five composite scores of *pedagogy*, *gender*, *ethnics*, *social class*, and *special need* were computed for each respondent by adding the scores on the 26, 5, 4, 4, 6, and 7 items in the perceived MCEB respectively measuring *overall*, *pedagogy*, *gender*, *ethnicity*, *social class*, and *special need*. Similarly, a total perceived MCEP score as well as four additional composite MCEP scores were computed by adding the scores on the 28, 7, 7, 7 and 7 items, respectively, measuring total MCEP, *teaching strategy*, *curriculum design*, *learning assessment*, and *classroom management*. Descriptive statistics and product moment correlation coefficients were then computed for all variables in order to examine relationships among teacher gender, attendance of MCE workshop, perceived MCEB and MCEP. In addition, a series of *t*-tests was used to compare teacher gender (male, female) and attendance of workshop (yes, no) as independent variables on the categories of perceived MCEB and MCEP as dependent variables. Finally, regression analysis was used to test with *overall MCEP*, *teaching strategy*, *curriculum design*, *learning assessment*, and *classroom management* as dependent variables and dimension of *pedagogy*, *gender*, *ethnicity*, *social class*, and *special need* teachers' gender and attendance of workshop as independent variables to determine if the teacher perceived MCEB, teachers' gender, and attendance of workshop predicted perceived MCEP.

## 3. Results

All statistical tests used to address the questions in this study used .05 as the minimum alpha level. The following tables present some descriptive statistics about variables as well as highlights from the inter-correlations matrix of the variables and the results of the independent sample *t*-test and multiple regression analysis run in this study.

### 3.1 difference analyses in gender and attendance of MCE workshop on teacher MCEB

Table 1 showed difference analysis results, which indicated that a significant difference between male teachers and female teachers in pedagogy dimension ( $t=-2.02$ ,  $p<.05$ ). The significant result indicating female teachers had a higher score on *pedagogy* dimension than male teachers. However, no significant differences were found between male teachers and

female teachers in another four dimensions, including *gender*, *ethnicity*, *social class*, and *special need*.

Table 1 also indicated a significant difference between teachers who had been attended MCE workshop and teachers who never attended MCE workshop in dimensions of gender ( $t=2.13$ ,  $p<.05$ ) and social class ( $t=2.84$ ,  $p<.01$ ). The significant results indicating teachers who had been attended MCE workshop had a higher score on *gender* and *social class* dimensions than teachers who never attended MCE workshop. In contrast, no significant differences were found between teachers who had been attended MCE workshop and teachers who never attended MCE workshop in another three dimensions, including *pedagogy*, *ethnicity*, and *special need*.

Table 1. *t*-tests of gender and attendance of MCE workshop on dimensions of perceived MCEB

MCEB/ Dimension	male( $n=179$ )		female( $n=285$ )		<i>t</i>	yes( $n=192$ )		no ( $n=272$ )		<i>t</i>
	M	SD	M	SD		M	SD	M	SD	
pedagogy	4.39	.50	4.48	.45	-2.02*	4.49	.45	4.42	.49	1.75
gender	4.37	.52	4.45	.90	-1.26	4.51	1.04	4.35	.51	2.13*
ethnicity	4.10	.59	4.20	.54	-1.82	4.23	.55	4.12	.57	1.97
social class	4.21	.51	4.21	.48	.06	4.28	.49	4.16	.48	2.84**
special need	4.23	.48	4.23	.46	1.34	4.30	.45	4.23	.48	1.63

\* $p<.05$ . \*\*  $p<.01$ .

### 3.2 difference analyses in gender and attendance of MCE workshop on perceived MCEP

Table 2 showed difference analysis results, which indicated significant differences were found between teachers who had been attended MCE workshop and teachers who never attended MCE workshop in four MCEP dimensions, including *teaching strategy* ( $t=3.83$ ,  $p<.001$ ), *curriculum design* ( $t=5.25$ ,  $p<.001$ ), *learning assessment* ( $t=4.33$ ,  $p<.001$ ), and *classroom management* ( $t=4.89$ ,  $p<.001$ ). Significant results indicating the teachers who have been attended MCE workshop had a higher score on all of MCEB dimensions than teachers who never attended MCE workshop. In contrast, no significant differences were found between male teachers and female teachers in perceived MCEP. In contrast,



Table 2. *t*-tests of gender and attendance of MCE workshop on dimensions of perceived MCEP

MCEP/ Dimension	male( <i>n</i> =179)		female( <i>n</i> =285)		<i>t</i>	yes( <i>n</i> =192)		no ( <i>n</i> =272)		<i>t</i>
	M	SD	M	SD		M	SD	M	SD	
Teaching strategy	4.23	.62	4.14	.47	1.67	4.29	.59	4.10	.47	3.83***
Curriculum design	3.59	.71	3.51	.60	1.24	3.72	.60	3.41	.64	5.25***
Learning assessment	3.89	.56	3.88	.56	.28	4.02	.56	3.79	.54	4.33***
Classroom management	3.65	.61	3.57	.58	1.41	3.76	.59	3.49	.57	4.89***

\*\*\*  $p < .001$ .

### 3.3 Correlational analysis between perceived MCEB and MCEP

Table 3 presents the inter-correlations among MCEB and MCEP. It can be seen that the five constructs of MCEB significantly correlated with each other, ranging from .38 to .73 ( $p < .01$ ). Similarly, four constructs of MCEP significantly correlated each other, ranging from .22 to .86 ( $p < .01$ ). As Table 3 showed, the five MCEB subscales and four MCEP subscales significantly correlated with each other. For correlated with perceived MCEP and MCEB, at teaching strategy level, the highest correlations were those related to special need ( $r = .59$ ,  $p < .01$ ), whereas the lowest correlations were those related to gender ( $r = .34$ ,  $p < .01$ ). At curriculum design level, the highest correlations were those related to ethnicity ( $r = .35$ ,  $p < .01$ ) and special need ( $r = .35$ ,  $p < .01$ ), whereas the lowest correlations were those related to pedagogy ( $r = .19$ ,  $p < .01$ ). At learning assessment, the highest correlations were those related to special need ( $r = .52$ ,  $p < .01$ ), whereas the lowest correlations were those related to gender ( $r = .33$ ,  $p < .01$ ). At classroom management, the highest correlations were those related to special need ( $r = .43$ ,  $p < .01$ ), whereas the lowest correlations were those related to pedagogy ( $r = .22$ ,  $p < .01$ ). At Overall level, the highest correlations were those related to special need ( $r = .56$ ,  $p < .01$ ), whereas the lowest correlations were those related to gender ( $r = .35$ ,  $p < .01$ ).

In summary, positive and significant correlations were found among the five MCEB dimensions, and among the four dimensions. Dimensions of ethnicity and special need showed higher correlations than other dimensions in MCEB with perceived MCEP.

**Table 3. Pearson product-moment correlation between perceived MCEB and perceived MCEP (n=464)**

variables	M	SD	1	2	3	4	5	6	7	8	9
<i>MCEB(overall)</i>	4.30	.44	.78**	.73**	.81**	.84**	.80**	.59**	.37**	.56**	.43**
1. pedagogy	4.45	.47	1								
2. gender	4.42	.78	.45**	1							
3. ethnicity	4.16	.568	.57**	.38**	1						
4. social class	4.21	.49	.60**	.41**	.72**	1					
5. special need	4.26	.47	.57**	.41**	.60**	.73**	1				
<i>MCEP(overall)</i>	3.80	.48	.36**	.35**	.52**	.53**	.56**	.75**	.85**	.86**	.86**
6. teaching strategy	4.17	.53	.43**	.34**	.49**	.54**	.59**	1			
7. curriculum design	3.54	.64	.19**	.25**	.35**	.33**	.35**	.46**	1		
8. leaning assessment	3.89	.56	.40**	.33**	.50**	.49**	.52**	.58**	.64**	1	
9. class management	3.60	.59	.22**	.24**	.41**	.41**	.43**	.50**	.68**	.66**	1

\*\*  $p < .01$ .

### 3.4 The prediction of perceived MCEP from teacher gender and MCE workshop

Table 4 showed the results of regression analysis of the prediction of MCEP from teachers' gender, indicating that teacher-perceived MCEP could not be predicted from teacher gender. In contrast, table 5 showed analysis results, which indicated that teachers' attendance of MCE workshop could significantly predict teacher-perceived MCEP at levels of teaching strategy ( $\beta = .18$ ;  $p < .001$ ), curriculum design ( $\beta = .24$ ;  $p < .001$ ), learning assessment ( $\beta = .20$ ;  $p < .001$ ), classroom management ( $\beta = .22$ ;  $p < .001$ ), and overall ( $\beta = .25$ ;  $p < .001$ ).

**Table 4. Multiple regression analyses of gender predicting MCEP (N=464)**

Independent variables	<u>teaching strategy</u>			<u>curriculum design</u>			<u>learning assessment</u>			<u>classroom management</u>			<u>overall</u>		
	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$
Constant	4.14	.03		3.52	.04		3.89	.03		3.57	.04		3.78	.03	
Gender	.09	.05	.08	.08	.06	.06	.02	.05	.01	.08	.06	.07	.07	.05	.07
	$R = .08, R^2 = .01$			$R = .06, R^2 = .00$			$R = .01, R^2 = .00$			$R = .07, R^2 = .00$			$R = .07, R^2 = .007$		
	$F(1,462) = 3.15$			$F(1,462) = 1.67$			$F(1,462) = 0.08$			$F(1,462) = 2.057$			$F(1,462) = 2.07$		

**Table 5. Multiple regression analyses of attendance of MCE workshop predicting MCEP (N=464)**

Independent variables	<u>teaching strategy</u>			<u>curriculum design</u>			<u>learning assessment</u>			<u>classroom management</u>			<u>overall</u>		
	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$
Constant	4.10	.03		3.42	.04		3.80	.03		3.50	.04		3.70	.03	
Attendance	.19	.05	.18***	.31	.06	.24***	.22	.05	.20***	.25	.05	.22***	.25	.04	.25***
	$R = .18, R^2 = .03$			$R = .24, R^2 = .06$			$R = .20, R^2 = .04$			$R = .22, R^2 = .05$			$R = .25, R^2 = .06$		
	$F(1,462) = 14.66$			$F(1,462) = 27.54$			$F(1,462) = 18.72$			$F(1,462) = 23.87$			$F(1,462) = 31.35$		

\*\*\*  $p < .001$



### 3.5 The prediction of perceived MCEP from MCEB

Table 6 showed the results of regression analyses of the prediction of perceived MCEP from each dimension of perceived MCEB. At teaching strategy level, the table showed analysis result, which indicated that teacher perceptions of MCEP were significantly associated with dimensions of gender and special need. The special need dimension ( $\beta=.36$ ;  $p<.001$ ) was apparently the best predictor of perceived MCEP. Gender dimension was also significantly associated with MCEP ( $\beta=.13$ ;  $p<.05$ ). The MCEB dimensions explained 39% of the variance in perceived MCEP at this level ( $R=.62$ ;  $R^2=.39$  and  $F(5,458)=57.67$ ;  $p<.001$ ).

At curriculum design level, the table showed analysis result, which indicated that teacher perceptions of MCEP were significantly associated with dimensions of pedagogy, gender, ethnicity and special need. Dimensions of ethnicity ( $\beta=.23$ ;  $p<.001$ ) and special need ( $\beta=.22$ ;  $p<.001$ ) were apparently the best predictors of perceived MCEP. Gender dimension ( $\beta=.13$ ;  $p<.01$ ) was also significantly associated with MCEP. However, pedagogy dimension ( $\beta=-.15$ ;  $p<.01$ ) was negatively significantly associated with MCEP at this level. The MCEB dimensions explained 18% of the variance in perceived MCEP at this level ( $R=.42$ ;  $R^2=.18$  and  $F(5,458)=19.37$ ;  $p<.001$ ).

At learning assessment level, the table showed analysis result, which indicated that teacher perceptions of MCEP were significantly associated with dimensions of gender, ethnicity and special need. The special need dimension ( $\beta=.27$ ;  $p<.001$ ) was apparently the best predictor of perceived MCEP. Dimensions of ethnicity ( $\beta=.23$ ;  $p<.001$ ) and gender ( $\beta=.09$ ;  $p<.05$ ) were also significantly associated with MCEP. The MCEB dimensions explained 33% of the variance in perceived MCEP at this level ( $R=.58$ ;  $R^2=.33$  and  $F(5,458)=45.88$ ;  $p<.001$ ).

At classroom management level, the table showed analysis result, which indicated that teacher perceptions of MCEP were significantly associated with dimensions of gender, ethnicity and special need. The special need dimension ( $\beta=.27$ ;  $p<.001$ ) was apparently the best predictor of perceived MCEP. Ethnicity dimension ( $\beta=.23$ ;  $p<.001$ ) was also significantly associated with MCEP. However, pedagogy dimension ( $\beta=-.17$ ;  $p<.01$ ) was negatively significantly associated with MCEP. The MCEB dimensions explained 24% of the

variance in perceived MCEP at this level ( $R=.49$ ;  $R^2=.24$  and  $F(5,458)=29.45$ ;  $p<.001$ ).

At overall level, the table showed analysis result, which indicated that teacher perceptions of MCEP were significantly associated with dimensions of gender, ethnicity and special need.

The special need dimension ( $\beta=.33$ ;  $p<.001$ ) was apparently the best predictor of perceived MCEP. Dimensions of ethnicity ( $\beta=.25$ ;  $p<.001$ ) and gender ( $\beta=.11$ ;  $p<.01$ ) were also significantly associated with MCEP. The MCEB dimensions explained 38% of the variance in perceived MCEP at this level ( $R=.62$ ;  $R^2=.38$  and  $F(5,458)=56.69$ ;  $p<.001$ ).

Table 6. Multiple regression analyses of dimensions of perceived MCEB predicting MCEP ( $N=464$ )

MCEB	teaching strategy			curriculum design			learning assessment			classroom management			overall		
	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$	B	S.E.	$\beta$
constant	.89	.21		1.41	.29		.78	.23		1.23	.25		1.08	.19	
pedagogy	.05	.06	.05	-.21	.08	-.15**	.02	.06	.02	-.22	.07	-.17**	-.09	.05	-.08
gender	.16	.03	.13*	.11	.04	.13**	.07	.03	.09*	.06	.04	.07	.07	.03	.11**
ethnicity	.13	.05	.05	.27	.07	.23***	.23	.06	.23***	.25	.06	.23***	.22	.05	.25***
Social class	.13	.07	.12	.05	.10	.04	.09	.08	.08	.15	.09	.12	.10	.06	.11
Special need	.14	.06	.36***	.30	.09	.22***	.32	.07	.27***	.34	.08	.27***	.34	.06	.33***
	$R=.62, R^2=.39$			$R=.42, R^2=.18$			$R=.58, R^2=.33$			$R=.49, R^2=.24$			$R=.62, R^2=.38$		
	$F(5,458)=57.67$			$F(5,458)=19.37$			$F(5,458)=45.88$			$F(5,458)=29.45$			$F(5,458)=56.69$		
	$p=.000$			$p=.000$			$p=.000$			$p=.000$			$p=.000$		

\* $p<.05$ . \*\* $p<.01$ . \*\*\* $p<.001$

#### 4. Discussion and conclusion

This study examined the relationships among MCEBs, MCEP, gender, and workshop attendance. Data analysis yielded the following findings. First, female teachers scored higher than males on the pedagogy dimension on the MCEBS but no significant differences existed between male and female teachers on the MCEPS. This empirical data for Taiwan schools show that individual factors, teachers' gender affected their MCEBs.

Second, attending an MCE workshop significantly affected the teachers' MCEBs and MCEP. Teachers who had attended an MCE workshop scored higher on gender and social class dimensions than teachers who had never attended an MCE workshop, and they also had a higher score on all MCEBS dimensions, including teaching strategy, curriculum design, learning assessment, and classroom management than teachers who had never attended an MCE workshop. Moreover, attending an MCE workshop can significantly predict teacher-perceived MCEP. These findings were, to some extent, in line with those of several other studies, showing that courses or workshops in MCE positively impact in-service teachers' beliefs (Edwards & Kuhlman, 2007; Wiggins, Follo, & Eberly, 2007). Further,

teachers' beliefs significantly influence how they plan, organize, and implement their lessons and their responsiveness to their students (Staub & Stern, 2002; Stipek, Givvin, Salmon, & MacGyvers, 2001; Fong & Sheets, 2004; Leonard & Leonard, 2006; McCall, 1995; Montano, Lopez-Torres, & DeLissovoy, 2002). Thus, secondary school teachers must be encouraged to attend MCE workshops to cultivate their knowledge, skills and attitudes. With this knowledge and skill set they can successfully teach youth multicultural perspectives, including increased understanding, sensitivity, and appreciation of the history, values, experiences, and lifestyles of different groups.

The MCEBs and perceived MECF were positively correlated; dimensions of ethnicity and special needs were more strongly correlated than other dimensions. Regardless of teaching strategy, curriculum design, learning assessment, and classroom management levels, MCEBs significantly predicted perceived MECF. The special needs dimension was the best predictor of perceived MECF at any level. These findings have two crucial implications for teacher education. First, teacher education should offer future teachers MCE courses that equip them with sufficient knowledge of cultures, beliefs, attitudes, skills to provide students with the necessary multicultural awareness. Several scholars have advocated for teacher education and professional development in MCE to improve teacher education (Garm & Karlsen, 2004; Sleeter & Bernal, 2004; Merryfield, 1995; Holden & Hicks, 2007). A number of scholars also have worked to improve pre-service teacher education for diverse K-12 students (Merryfield, 1996; Zeichner & Hoeff, 1996). Other scholars have made efforts to increase cross-cultural experiences within diverse populations of pre-service teacher (Merryfield, 2002; Merryfield, 1995; Sahin, 2008). Second, the special needs of students should be a focus when preparing future teachers. Although this study only measured teachers' MCEBs and MECF, it contributes to recent calls for additional evidence of the effects of teacher education programs on MCE and suggests that teacher educators create suitable systems that enhance MCE knowledge and abilities. Of course, future research can apply other measures (e.g., classroom observation of curriculum design and implementation related to MCE) to acquire evidence regarding improvements to MCE for teachers.

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