A Psychometric Investigation of the Multicultural and Special Education Survey: An Exploratory Factor Analysis

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An exploratory factorial analysis of the Multicultural and Special Education Survey (MSES) evaluated the professional development training needs of general and special educators in a midwestern state. Survey items were selected from the culturally and linguistically diverse multicultural, bilingual and special education literature bases (CLD). The MSES was distributed to 403 general and special educators in school districts with an enrollment of (a) less than 10 percent of CLD students and (b) greater than 10 percent of CLD students. The results of the exploratory factor analyses revealed 7 common factors that accounted for 88% of the variability in teacher responses: (a) cultural knowledge, (b) teaching strategies, (c) curriculum and materials, (d) parental communication, (e) monitoring and evaluation, (f) individualized education plan, and (g) community relations. Implications for professional development programs in multicultural and special education are discussed.

The historical and contemporary cultural diversity of public schools has considerable implications for teacher education programs in general and special education (Villegas & Irvine, 2010). The teaching profession is continually scrutinized for not addressing the achievement and cultural gaps of culturally and linguistically diverse (CLD) students with and without disabilities that exist in general and special education classrooms (Obiakor & Algozzine, 2009; Trent, Kea, & Oh, 2008; Utley & Obiakor, 2001). In many school districts, when prospective general and special educators are hired, they lack the teacher competencies to adequately assess, teach, and evaluate CLD students with and without disabilities (Tyler, Yzquierdo, Lopez-Reyna, & Flippin, 2004). The literature on teacher quality in special education stated that

> eighty percent of special education teachers serve students with two or more primary disabilities, and 32 percent teach students with four or more different primary disabilities. On average, almost one-fourth of their students are from a cultural or linguistic group different from their own, and 7 percent are English language learners. Special education teachers serve students who are highly diverse and challenging even though they typically serve fewer students (13 in PK-6th grade and 25 in 7th-12th) than general educators (24 in PK-6th grade and 118 in 7th-12th). (Office of Special Education Programs, 2002, p. 1)

Connelly, Rosenberg, and Sindelar (2004), Boe and Cook (2006), and Rosenberg, Boyer, Sindelar and Misra (2007) reported that there is an acute shortage of qualified personnel with CLD backgrounds who are certified to teach as special educators. Special education teachers were reported to be predominantly White (86 %) and the student population requiring special education services was culturally diverse (32%). Nationwide statistics have shown that African American males comprise only 0.4 percent of elementary special education teachers and 2.3 percent of secondary special education teachers (Center on Personnel Studies in Special Education [COPSSE], 2004). Consequently, school administrators find it imperative to provide professional development activities that address attitudes, knowledge, and skills in multicultural/bilingual education to effectively teach CLD students with and without disabilities placed in general and special education classrooms.

General and special educators are faced with the challenges of implementing protections provided by the Individuals with Disabilities Education Improvement Act *(*IDEIA) of 2004 to guarantee that CLD students with disabilities are not (a) disproportionately represented in special education programs, (b) misidentified using biased and discriminatory assessment instruments, and (c) evaluated using ineffective teaching and instructional strategies (Coutinho & Oswald, 2004; Donovan & Cross, 2002; Harry & Klingner, 2006). Despite federal legislation, national trends in U.S. public school data continue to show the disproportionate representation of CLD students in special education.

Critical Areas of Knowledge About CLD Students With Disabilities

Disproportionality appears to be a complex phenomenon influenced by a number of contributing factors which differ from group to group and may vary from one context to another. The disproportionality literature tends to focus on the disability categories of mental retardation, learning disabilities, and emotional disabilities, as these are the high-incidence disabilities and constitute over 63% of students eligible for special education (Johnson, Lessem, Bergquist, Carmichael, & Whitten, 2000; Obiakor, 2006; Sullivan et al., 2009; U.S. Department of Education [USDOE], 2002). More specifically, disproportionality exists in 4 different forms and levels of the public education system: (a) national, state, and district levels reports describing the over-identification of CLD students as disabled; (b) higher-incidence rates are reported for certain CLD populations in specific special education categories such as learning disabilities and mild mental retardation; (c) significant differences in the proportion of CLD students who are receiving special education services in more restrictive and segregated programs; and (d) excessive incidence, duration, and types of disciplinary actions including suspensions, expulsions, experienced by CLD students (Obiakor & McCollin, This special issue; Skiba, Poloni-Staudinger, Simmons, Feggins-Azziz, & Chung, 2005; USDOE, Institute for Education Sciences [IES], 2009; Utley & Obiakor, 2002).

Because of personnel challenges in special education, protections under IDEIA (2004), issues of disproportionality, and the contributing factors to the placement of CLD students in special education programs, it is critical that measures be designed to assess the professional knowledge base and skills of general and special educators who teach CLD students with and without disabilities. In this paper, a brief

review of literature on instruments designed to measure the multicultural attitudes, knowledge base, and skills of general and special educators will be presented. Next, this paper introduces the Multicultural Special Education Survey (MSES) and will describe the procedures and results for developing and determining the psychometric properties for this instrument. The discussion of this paper will suggest further areas of research for applied purposes.

Previous Research on the Multicultural Attitudes, Knowledge Base, and Skills of General and Special Educators

In order to address the under-preparedness of general educators who teach CLD students without disabilities, a review of literature was conducted to examine knowledge base and skills in their professional development and multicultural needs (Obiakor & Utley, 1997; see Patton, This special issue). In addition, research on measuring the attitudes, knowledge base, and skills of general educators was conducted. Several researchers (e.g., Capella-Santana, 2003; Gilbert, 1997; Guyton & Wesche, 2005; Marshall, 1996; Nelson, Bustamante, Wilson, & Onwuegbuzie, 2010; Paccione, 2000; Pearrow & Sanchez, 2010; Pohan & Aguilar, 2001; Pontereotto, Gretchen, Utsey, Stracuzzi, & Saya, 2003; Sachs, 2004; Scott & Pinto, 2001; Tatum & Morote, 2010; Turner, 2007; Roberts-Walter, 2007) found that a large number of instruments have been developed to measure attitudes, knowledge, and skills of general educators in multicultural education. Pohan and Aguilar reported that:

> Our review of existing measures resulted in the following observations. Among the few studies of teachers' beliefs about diversity using empirical measures, reliability and validity data were seldom reported. Many of the measures focused on one or two specific characteristics of diversity (i.e., race, gender, ethnicity, and/or social class). Others focused on selected aspects of diverse learners (i.e., academic achievement abilities and stereotypic attitudes), curriculum and/or multicultural education, and cultural sensitivity. We discovered that the data derived from these empirically based measures were interpreted with limited or no discussion on instrument reliability and validity. (2001, p. 6)

Previous Research on Multicultural Education Training for General and Special Educators in Teacher Preparation Programs

Most recently, Trent et al. (2008) conducted an extensive review of literature to determine the quantity, quality, and topics related to multicultural education in pre-service general and special education teacher education programs. These researchers found a total of 46 studies—39 from general education and 7 from special education literature bases. With regard to empirically based articles on multicultural education in general education programs, 25 studies used qualitative research methods (e.g., focus groups, field notes, reflective journals, etc.), and fourteen articles used either quantitative and/or mixed methods to measure the effects of coursework on teacher candidates. Topics addressed in coursework were the following: (a) curriculum and instruction (e.g., lesson plans, etc.), (b) critical race theory, (c) antiracist theory, (d) Bank's typology, (e) patriotism, (f) Bennett's model on intercultural

sensitivity, and (g) intersectionality-emancipatory pedagogies. In special education teacher education programs, these researchers found three mixed method and four qualitative studies. Topics addressed were (a) Bank's framework on social action, (b) attitudes and beliefs on self and others, and (c) program efficacy on teacher candidates.

Previous Research on the Measurement of Attitudes, Knowledge, and Skills of General and Special Educators in Professional Development

A review of empirical research on the assessment of attitudes, knowledge base, and skills of general and special educators who received multicultural education training revealed two studies. The first study by Voltz, Brazil and Scott (2003) conducted pre- and post assessments of general and special educators as a part of a series of interactive seminars on multicultural education and special education in Project Crisp (i.e., Culturally Responsive Instruction for Special Populations). Thirty-five general and special educators were interviewed about their referral practices, instructional strategies, and behavior management perspectives. On the pre- and post assessment interviews, the results indicated that the majority of general educators felt (a) prepared to work collaboratively with parents from diverse cultures; (b) knowledgeable about the various cultural groups represented among the students they taught; (c) less confident in their preparedness to address the educational needs of CLD students; and (d) capable of distinguishing between culturally based learning differences and disabilities. The majority of special education teachers indicated that they felt prepared on all five items related to teacher knowledge and skill (i.e., content integration, the knowledge construction process, prejudice reduction, empowering school culture, and equity pedagogy (Banks, 2001); however, they disagreed that university courses or in-service programs had prepared them well to meet the educational needs of culturally diverse students.

In the second article, Utley, Delquadri, Obiakor, and Mims (2000) measured the perceptions of general and special educators who teach CLD students with and without disabilities. The results of the statewide distribution of the MSES in a midwestern state (which consisted of items in the categories of professional development, cultural knowledge, linguistics, and teaching strategies) revealed that (a) respondents had received little or no professional development training in multicultural education coursework; (b) cultural knowledge would help them understand the nonverbal/verbal learning and behavioral styles of their students; (c) topics of language and child development should be a high priority in training; (d) teacher-student discussion, cooperative learning, and peer tutoring were useful teaching strategies; and (e) praise and informative feedback, literature that reflected the students' experiences, opportunities for practice, and instructional decisions based on students' performance facilitated the learning process.

The Multicultural and Special Education Survey (MSES)

The MSES was developed to identify professional development training needs of general and special educators who work with CLD students with and without mild disabilities. Survey items were based upon the empirical literature in the areas of multicultural/bilingual protections under IDEIA and special education. The following categories were formed: (a) demographic information, (b) professional development, (c) cultural knowledge, (d) multicultural and special education, (e) linguistic foundation, (f) assessment, (g) classroom management, (h) teaching strategies, (i) curriculum and materials, (j) individual education plans, (k) monitoring and evaluation, (l) community relations, (m) parental communication, and (n) professional communication.

Response Format and Scoring

The MSES was a 73-item questionnaire with a variety of response alternatives (e.g., semantic differentials, 5- or 6-point Likert-type scaling). The demographic and professional development sections of the survey consisted of statements such as (a) fill in the blanks, (b) check only three items, and (c) check all that apply. The category of teaching strategies consisted of (a) checking all items that apply and (b) ranking items as follows: never, rarely, sometimes, frequently, always, and not applicable (see Appendix A and Appendix B).

Validation Procedures

The validation of survey items was conducted using a Delphi method which eleven multicultural/bilingual education experts from universities throughout the United States reviewed. These experts reviewed the survey format, examined statements for clarity, thoroughness, appropriateness, and contributed their professional comments on item modifications. Suggestions and modifications for the refinement of items were integrated into the final survey form. (see Appendix A and Appendix B).

Reliability Procedures

Test-retest reliability was obtained through the distribution of the survey to 23 elementary school teachers in a small midwestern school district. The respondents were administered the survey on two different occasions within a three-week period. Pearson-product moment correlations were computed to determine the relationship between the scores obtained from each of the teachers on two different administrations of the survey. As illustrated in Table 1, the total subject agreement of respondents was 79% with individual teacher item responses from 34% to 98%.

Table 1. *Description of Survey Categories and Percent Agreement Among General and Special Educators*

Categories	Percent of Categoric Agreement
1. Demographics	98%
2. Professional Development	77%
3. Cultural Knowledge	64%
4. Multicultural and Special Education	60%
5. Linguistic Foundation	34%
6. Assessment	49%
7. Classroom Management	69%
8. Teaching Strategies	61%
9. Curriculum and Materials	53%
10. Individual Education Plan	56%
11. Monitoring and Evaluation	62%
12. Community Relations	33%
13. Parental Communications	78%
14. Professional Communication	54%

School District Site Selection

To ensure even survey distribution to schools with CLD students across the state, 94 school districts were identified with assistance technical advisors from the State Board of Education. The school district categorical criteria of 10 percent or more CLD student enrollment in a school district was the basis for selecting school districts. Forty-seven school districts met this criterion for inclusion into this category. A second category of school districts consisting of less than 10 percent CLD student enrollment was obtained. Forty-seven school districts were randomly selected from 257 districts throughout the state. Since there were only 47 school districts which were identified as having 10 percent or greater CLD students, all of them participated in the project. A total of 47 school districts with less than 10 percent CLD and 47 school districts with 10 percent or greater participated in the survey.

Criteria for selection of the schools within each district were based on student population. Small school districts with less than 2,999 student enrollment identified one elementary, one middle, and one high school in their school district. Medium-sized school districts (3,000 to 29, 000 student enrollment) identified two elementary, two middle, and two high schools in their respective districts. Large school districts with student enrollments of greater than 30,000 selected three middle and three high schools from their district.

Recruitment Procedures for Sample Respondents

Once school district superintendents returned their school-selected forms with school and principal names and addresses, letters of introduction to directors

of special education, principals and teachers along with the survey were mailed to the selected school's principal for distribution. Principals distributed the surveys to (a) two special education personnel at the elementary and middle schools, (b) four special educators at the high school level, and (c) one general educator at each grade level in all of the selected schools. General and special educators were provided self-addressed stamped envelopes, directions for survey completion, and assurances of confidentiality. Surveys were returned within a week of distribution, and survey return reminder postcards were mailed to participating school principals whose teaching staff had not met the one week deadline. Additional follow-up calls were made to ensure receipt of surveys from those who had not returned completed surveys by the requested deadlines.

RESULTS

Survey Return Rate

As can be seen in Table 2, forty-eight percent (48%) of the 833 surveys which were distributed were returned. School districts with less than 10 percent CLD students returned over 45% of the surveys and districts with 10 percent or more CLD students returned 50% of the survey. Again, the purpose for distributing surveys according to CLD and non-CLD school districts was to ensure even distribution to schools with and without CLD students in their classrooms.

Table 2. *Rate of Return of Surveys Distributed to School Districts in Midwestern State*

School Districts	Number of Surveys Distributed	Number of Surveys Returned	Percentage of Surveys Returned
With < 10% CLD Students	258	118	45.73%
With > 10% CLD Students	575	285	49.56%
Total	833	403	48.3%

Survey Respondents

The respondents reflected the geographical population distribution throughout a midwestern state for rural (56%), urban (23%), and suburban (18%) community settings. Overall, the respondents taught elementary (39%), middle (18%), and senior high (25%) students, while 14% of the sample taught more than one level. General educators (69%) were the most represented and special educators (24%) followed second. Over 75% of the respondents were 35 years and older. Unsurprisingly, 83% of the respondents were female. Half (50%) of the respondents had a Master's degree and over two-thirds had more than 10 years teaching experiences. An overwhelming 93% of the respondents were identified as Caucasian/Northern European, while 4% identified themselves as Native American, Latino, African American

or Asian American. Seventy-five percent of the respondents taught at least one CLD student with and without disabilities. There were no significant differences in the needs of a CLD and special education knowledge base between respondents who had CLD students with and without mild disabilities and those respondents who had none.

Tables 3.0-3.2 depict the sources of information from which (a) the respondents acquired information about multicultural issues, (b) the important multicultural issues that they would recommend for student teacher trainees, and (c) their preferences for multicultural training sessions. The results indicated that the respondents perceived that reading professional journals and books were the primary sources for learning about multicultural issues; furthermore, parental communication, teaching strategies, and cultural knowledge were the three top issues to be studied. A 1-day workshop or conference were the best training formats for professional development.

Data Analyses

Responses ($N = 403$) to the 73-item survey were factor analyzed using principal component analysis and Varimax (i.e., orthogonal rotation) with Kaiser normalization. Statistical procedures using SPSS 9.0 were applied to the data. No a priori factor structure was hypothesized and all of the factor scores had equal weightings. A cutoff correlation of 0.3 was used as an acceptable minimal value for pattern structure coefficients (Lambert & Durand, 1975). The final solution was composed of 6 factors that accounted for 88% of the common variance in the items. Communality coefficients from the exploratory factor analysis were estimated using squared multiple correlations. Inspection of the scree plot indicated that the magnitude of eigenvalues tapered off after the sixth factor (Green & Salkind, 2008; Henson & Roberts, 2006).

An exploratory factor analysis solution using principal component analysis as an extraction method was used. The Varimax method (with Kaiser Normalization rotation) is the most common method for the orthogonal rotation (i.e., keeping the rotated factors uncorrelated). In addition, this type of factor rotation was used to examine patterns or the dimensionality of factors identified by the concerns of general and special educators.

Table 3. *Sources of Information on Multicultural Issues*

Source of Information	Rank	% of times checked
Reading of professional journals and books	1	52
Attendance at cross-cultural activities	2	28
Participation in multicultural & bilingual projects	3	6
Writing of articles or presentation of discussion/symposia	4	2
No response	5	12

Table 3.1. *Importance of Multicultural Issues for Student Teacher Trainees*

Issue	Rank	% of times checked
Parental Communication	1	12
Teaching Strategies	2	12
Cultural Knowledge	3	11
Classroom Management	4	9
Curriculum and Materials	5	9
Second Language Acquisition	6	7
Community Relations	7	7
Assessment	8	6
Multicultural/Bilingual and Special Education (Historical and Legal)	9	6
Individual Education Plan	10	5
Child Language Development	11	5
Professional Communication	12	5
Monitoring and Evaluation	13	5
No Response	14	<1
Other	15	<1

Table 3.2. Teacher Preferences for Multicultural Training by Percentage

	None	1-day workshop or conference	3-day workshop or conference	One 3-hour credit course	2 or more courses
Child language development	40.0	36.2	8.4	6.0	2.5
Primary language development in reading, writing, and language acquisition	32.0	33.5	18.9	7.7	3.5
Child second language acquisition	35.5	37.0	14.4	7.4	2.0
Second language assessment in reading, writing, and speaking English	33.0	32.0	18.4	9.2	2.7
Language disorders	23.8	39.5	16.1	9.2	1.7
Learning disabilities	25.8	32.8	17.4	12.7	6.5
The language of one of my students	42.2	22.6	9.7	9.7	9.7
The language structure of dialects: (African American and/or Hispanic vernaculars)	28.5	24.3	9.7	7.4	1.0

RESULTS

Following the exploratory factor analysis, descriptive and corrected item total correlations for each of the items was calculated. On the basis of a Scree test (Cattell, 1966), an approximate solution of six factors was indicated. Oblique factor solutions of six, five, four, three, and two factors were considered, as well as a one-factor solution (see Figure 1).

Figure 1. **Scree Plot**
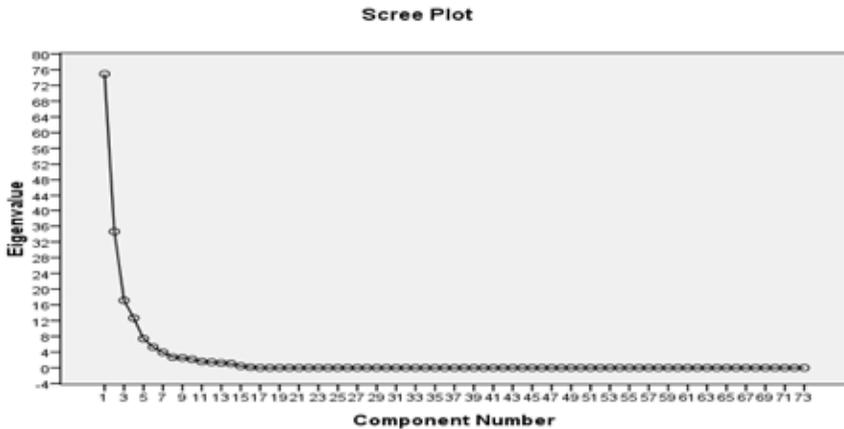
As can be seen in Table 4, Cronbach alpha values of the item subscales are presented. The mean correlation for survey items in Factor I (cultural knowledge 1) is 0.85; for Factor II (teaching strategies 2), 0.75; for Factor III (curriculum and materials), 0.67; for Factor IV (parental communication), 0.69; for Factor V (monitoring and evaluation procedures), 0.85; for Factor VI (IEP), 0.94; and for Factor VII (community relations), 0.67. With regard to the reliability of each subscale, Factor I presents a satisfactory alpha ($\alpha = 0.95$); Factor II shows a similar value ($\alpha = 0.90$); Factor III ($\alpha = 0.86$); Factor IV ($\alpha = 0.94$); and Factor V ($\alpha = 0.97$). The following two factors present inferior values: Factor VI ($\alpha = 0.87$) and Factor VII ($\alpha = 0.86$).

Table 4. *Factor Means, Standard Deviations, Coefficient Alphas, and Correlations*

Factor I: Cultural Knowledge	(α = 0.87)			
Item	Mean	S.D.	Corrected Item-Total Correlation	Alpha if Item Deleted
Item 1	4.56	1.504	.855	.979
Item 2	5.56	1.423	.854	.979
Average = 5.06				
Factor II: Teaching Strategies	(α = 0.95)			
Item	Mean	S.D.	Corrected Item-Total Correlation	Alpha if Item Deleted
Item 46	4.94	.998	.801	.939
Item 47	5.06	.938	.787	.940
Item 49	4.50	1.505	.760	.940
Item 45	4.89	1.023	.741	.941
Item 52	5.00	.907	.762	.940
Item 51	4.78	1.215	.780	.939
Item 43	4.56	1.338	.772	.940
Item 50	4.17	1.724	.673	.944
Item 53	5.17	.786	.785	.940
Item 48	4.72	1.227	.760	.940
Item 44	4.44	1.464	.699	.943
Item 54	4.78	1.114	.706	.942
Average = 4.78				
Factor III: Curriculum and Materials				
Item	Mean	S.D.	Corrected Item-Total Correlation	Alpha if Item Deleted
Item 67	2.67	1.680	.666	.882
Item 56	2.94	1.697	.747	.874
Item 58	2.89	1.779	.770	.872
Item 57	2.78	1.700	.656	.883
Item 68	2.39	1.685	.655	.883
Item 65	2.33	1.680	.640	.884
Item 55	2.67	1.645	.720	.877
Item 66	2.00	1.645	.530	.894
Average = 2.58				

Table 4. *(continued)*

Factor IV. Parental Communication	(α =0.86)			
Item	Mean	S.D.	Corrected Item-Total Correlation	Alpha if Item Deleted
Item 73	3.44	2.007	.681	.826
Item 71	4.11	1.451	.742	.812
Item 70	3.89	1.711	.695	.821
Item 69	4.28	1.364	.717	.813
Item 72	3.94	2.155	.607	.853
Average = 3.93				
Factor V. Monitoring and Evaluation Procedure	(α =0.94)			
Item	Mean	S.D.	Corrected Item-Total Correlation	Alpha if Item Deleted
Item 63	4.22	1.896	.939	.888
Item 62	4.22	1.768	.889	.905
Item 61	4.22	1.896	.924	.893
Item 64	5.44	1.294	.663	.973
Average = 4.53				
Factor VI. IEP	(α =0.97)			
Item	Mean	S.D.	Corrected Item-Total Correlation	Alpha if Item Deleted
Item 59	4.72	1.674	.937	.980
Item 60	4.56	1.756	.937	.980
Average = 4.64				
Factor VII. Community Relations	(α =0.90)			
Item	Mean	S.D.	Corrected Item-Total Correlation	Alpha if Item Deleted
Item 67	2.67	1.680	.666	.882
Item 56	2.94	1.697	.747	.874
Item 58	2.89	1.779	.770	.872
Item 57	2.78	1.700	.656	.883
Item 68	2.39	1.685	.655	.883
Item 65	2.33	1.680	.640	.884
Item 55	2.67	1.645	.720	.877
Item 66	2.00	1.645	.530	.894
Average =2.58				

Table 5. Rotated Component Matrix for General and Special Educators' Perceptions for CLD Students With Disabilities

Item Numbers		Component					
		1	2	3	4	5	6
	Factor 1. Cultural Knowledge I (This would help my teaching) (2 items)						
1	Planning curriculum						.892
2	Instructing students						.902
	Factor 2. Teaching Strategies (12 items)						
46	Provide classroom activities that are directly related to academic objectives	.912					
47	Provide praise and informative feedback on assignments	.897					
49	Present many examples of new concepts for generalization	.865					
45	Prepare students for instructional activities through conversation	.853					
52	Provide practice opportunities to increase learning	.852					
51	Use prompts and cues to elicit activity responses	.843					
43	Maximize time in direct instruction activities	.841					
50	Present literature which reflects my students' experiential background	.836					
53	Make instructional decision based on students' performance	.831					
48	Use student's experiential background to aid under-standing	.822					
44	Minimize time in non-instructional transitional activities	.817					
54	Use of modeling and role playing procedures	.792					
	Factor 3: Curriculum and Materials (5 items)						
67	Materials		.916				
56	Accommodate students' cultural background and language of instruction		.905				
58	Increase response levels		.904				
57	Present accurate historical information about various cultures		.895				
55	Provide clear directions for assignments and tests		.863				
	Factor 4: Parental Communication (5 items)						
73	Cultural barriers			.845			
71	Parents feedback concerning academic and school behavior			.837			
70	Parents input of their child's goals and objectives			.813			
69	Successful communication to express my concerns or praises about the student			.768			
72	Language barriers (written or spoken)			.718			

Two criteria were used to identify factors underlying the items: (a) items with a factor loading equal to or greater than .40 and (b) factors that were interpretable. As a result, 33 of the 73 items were reduced to a 7-factor solution and interpreted. These seven factors accounted for 90% of the common variance. These 7 factors were (a) teaching strategies 2, with 12 items; (b) community relations, with 4 items, and curriculum and materials, with 4 items; (c) parental communication, with 5 items; (d) monitoring and evaluation, with 4 items; (e) individual education plan, with 2 items; and (f) cultural knowledge 1, with 2 items. As can be seen in Table 5, all variables with loadings (i.e., correlations) of .50 or more have been deleted to clarify the structure. As depicted in Table 5, a list of 33 items and their rotated factor loadings sorted by size are displayed with factor coefficients suppressing big values.

Summary and Findings of Exploratory Factor Analysis

The primary purpose of this study was to conduct an exploratory factorial analysis of the MSES, which was distributed to general and special educators that represented urban and rural geographical areas in a midwestern state. In summary, the factor analysis revealed 7 factors: (1) cultural knowledge, (2) teaching strategies, (3) curriculum and materials, (4) parental communication, (5) monitoring and evaluation procedures, (6) IEP, and (7) community relations. General and special educators perceived these 7 categories to be of major concern to the education of CLD students with and without disabilities.

The first factor, *cultural knowledge*, was viewed by general and special educators as critical to (a) teacher expectations; (b) teachers' understanding of CLD students' verbal/non-verbal behaviors, problem behaviors, and perceptions of time and space; (c) curriculum planning; (d) selection of classroom resources; (e) diagnosis and assessment procedures; and (f) professional development.

The second factor, *teaching strategies*, underscored teachers' concerns for the importance of devoting their time preparing activities (e.g., instructional and social) for CLD students with and without disabilities to reach their academic goals. The items in this second factor stressed the importance of (a) taking into account the CLD students' background (e.g., previous academic experience); (b) using praise to encourage CLD students; (c) incorporating new concepts using literature from their own CLD backgrounds; and (d) changing teachers' practices, methods, strategies and responses, as based on CLD students' learning needs.

The third factor, *curriculum and materials*, is highly related to the completion of assignments and enables general and special educators to provide accommodations in teaching and test-taking for CLD students with and without disabilities.

The fourth factor, *parental communication*, involves effective communication between the parents and teachers. This factor includes parents' feedback to general and special educators on CLD students' academic, social behavior, language, and cultural barriers that prevent successful learning outcomes. In addition, this factor was viewed as a positive influence and an essential element for assisting teachers to implement interventions and programs that facilitate the educational achievement of their child.

The fifth factor, *monitoring and evaluation procedures*, was viewed by general and special educators as essential when using assessment instruments, implementing classroom activities, and conducting annual evaluations.

The sixth factor, the *IEP*, measured the perceptions of general and special educators' beliefs about (a) the inclusion of cultural and linguistic factors in the CLD student's educational plan; (b) how to teach the core curriculum areas of reading, math, and spelling; and (c) the use of effective instructional strategies and behavior management strategies.

The seventh factor, *community relations*, reflects the goal to involve persons in the community (e.g., businesses, churches) to support the educational needs of CLD students with and without disabilities. This factor was viewed as important because a liaison between the school and community would provide educational resources and materials to schools in order to support the needs of CLD students with and without disabilities.

Limitations of the Study

The primary purpose of this study was to conduct a factor analysis of the MSES, an instrument designed to measure the multicultural special education competencies for general and special educators to be effective practitioners who teach CLD students with and without mild disabilities. This study warrants a discussion of three limitations.

First, the MSES is a self-report instrument designed to gain information about the multicultural competencies and actual teaching practices of general and special educators who teach CLD student with and without mild disabilities. The degree to which this self-report measure actually reflects general and special educators' classroom practices is an important study limitation. One important issue related to self-report is the potential for response bias (Green et al., 2005). The relationship between attitudes-beliefs and responding to a survey in a socially desirable way is critical because the results may be misleading. According to these researchers, controlling for potential multicultural social desirability bias (e.g., insistence that participants always interact positively with CLD students) in the self-report of general and special educators' competencies in teaching CLD students with and without disabilities is a limitation that must be considered in the measurement of attitudes, knowledge, and skills.

Second, the analysis reported results based on data obtained from a non-random sample of general and special educators from one Midwestern state. Therefore, the results of this factor analysis do not necessarily reflect the relationship of variables that would be found in the response rates of general and special educators in rural and urban public schools throughout the United States. The generalization of results from this one study is limited (Price, 1992).

Third, some public school districts had a limited number of respondents that—together with structured non-response across items—made direct estimates of the sampling covariance matrices relatively unstable. With the inclusion of more school districts and larger sample sizes (e.g., urban and rural areas) within schools, the estimates of the between-school district covariance would be more robust and less reliant on modeling assumptions.

Implications for Future Research

The results of this study suggest that the MSES appears to be a promising instrument to assess multicultural special education competencies with general and special educators.

Having the measurement tools necessary to assess the multicultural special education competencies of general and special educators who teach CLD students with and without mild disabilities is a necessary instrument to understanding their attitudes, knowledge, and skills. The continued validation and refinement of the MSES will provide essential information about what are the components of professional development for general and special educators to become effective practitioners. For researchers, scholars, and teacher educators interested in the multicultural special education competencies in relation to teacher quality, it is recommended that we continue with these types of methodological investigations in the field of special education.

As noted earlier in this paper, there are a number of assessment instruments designed to measure the attitudes-beliefs, knowledge, and skills of general educators in multicultural education at the preservice level and in professional contexts (e.g., Marshall, 1996; Pohan & Aguillar, 2001; Sachs, 2004). Unfortunately, reliability and validity properties of these instruments were seldom reported (Pohan & Aguillar, 2001). However, the empirical database of assessment instruments for measuring the attitudes, knowledge, and skills of special educators who teach CLD students with mild disabilities in public schools is virtually non-existent in the special education literature. It is recommended that a research agenda examining the psychometric properties of multicultural education instruments within the field of special education be developed to assess the attitudes, knowledge, and skills of general and special educators in different professional contexts.

Guyton and Wesche (2005) noted that " the National Council for the Accreditation of Teacher Education's (2002) *Standards, Procedures, and Policies for the Accreditation of Professional Educational Units* contains criteria for encouraging multicultural and global perspectives in the teacher education curriculum; field-based experiences with culturally diverse and exceptional populations; recruitment of teacher candidates from diverse economic, racial, and cultural backgrounds; and a teacher education faculty that represents cultural diversity" (p. 1). The Council for Exceptional Children (2008) developed a list of knowledge and skills for multicultural competence in special education. Knowledge and skill areas cover the areas of (a) assessment, (b) beliefs-historical perspectives, (c) communication, (d) English as a Second Language, (e) home and school, (f) instruction, (g) learning differences, and (h) learning instruction. However, in previous research on state standards in special education, Miller, Strosnider, and Dooley (2002) found that even though 23 states listed or described specific standards or expectations for special educators, there was little consistency in the way that states addressed issues related to cultural diversity. In addition, these authors found that teacher preparation licensure requirements determine teacher special education competencies for special educators. Therefore, it is recommended that an empirical database on a variety of multicultural assessment tools that measure multicultural and special education competencies of special educators be made available for local school districts and state agencies.

The fields of multicultural education and special education are very complex. A measurement tool, such as the MSES, should not be used as a single instrument to assess the multicultural special education competencies of general and special educators. It is recommended that a triangulation of measures—including interviews, qualitative approaches, and classroom observations—be included in the assessment of the attitudes-beliefs, knowledge, and skills of general and special educators in order to increase our understanding of how multicultural special education competencies evolve as a result of increased exposure to CLD students with and without mild disabilities. And finally, the implementation of a longitudinal research program on the measurement of multicultural special education competencies would allow professionals and researchers to examine the (a) strengths and weaknesses of general and special educators, (b) teacher efficacy in teaching CLD students with and without disabilities, (c) predictability of teacher success in dealing with an array of multicultural issues in special education, and (d) impacts of pre-service teacher education programs and professional development training over time. This kind of research would address the question of whether or not multicultural special education competencies in general and special educators remain stable or change over time.

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AUTHOR NOTE

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APPENDIX A
Sample Survey Items of the MSES

Category: Cultural Knowledge
1. Knowledge about my students' ethnic, national, or cultural background would help my teaching in the following ways:

Survey Items	Never	Rarely	Sometimes	Frequently	Always	Not Applicable	No Response
a. Planning curriculum							
b. Instructing students							
c. Selecting additional classroom resources							
d. Choosing professional development							
e. Handling behavior problems							
f. Conducting assessments (oral and written)							
g. Understanding student expectations							
h. Understanding my own and behavioral expectations							
i. Understanding students' perceptions of the use of time and/or space							
j. Understanding the influence of students' verbal and nonverbal behavioral styles							

2. Knowledge about my students' ethnic, national, or cultural background would help my students with the following:

Survey Items	Never	Rarely	Sometimes	Frequently	Always	Not Applicable	No Response
a. Coping with a new cultural environment							
b. Peer interactions							
c. Increased motivation							
d. Daily classroom performance							
e. Completing homework							
f. Test performance							
g. Classroom behavior							
h. Academic skills							

APPENDIX B

Additional Sample Survey Items of the MSES

Category: Teaching Strategies

When teaching CLD students with and without mild disabilities in my classroom, the following teaching strategies are useful:

Survey Items	Never	Rarely	Sometimes	Frequently	Always	Not Applicable	No Response
a. Maximize time in direct instruction activities							
b. Minimize time in non-instructional transitional activities							
c. Prepare students for instructional activities through conversations							
d. Provide classroom activities that are directly related to academic objectives							
e. Provide praise and informative feedback on assignments							
f. Use student's experiential background to aid understanding							
g. Present many examples of new concepts for generalization							
h. Present literature which reflects my students' experiential background							
i. Use prompts and cues to elicit academic responses							
j. Provide practice opportunities to increase learning							
k. Make instructional decisions based on students' performance							
i. Use of modeling and role playing							