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Antecedents, implications, and professional development of teachers' multiculturalism

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Appendix D

Supplementary Chapter 6

Comparing Teachers with Different Ethnic Identities

We investigated whether there were any differences between groups of teachers with different ethnic identities regarding the main variables in our model. A one-way MANOVA was performed with self-identified ethnic background of the teachers (only Dutch, Dutch and another, another) as the grouping variable, their perspective taking, multicultural attitudes, and culturally responsive teaching as the variables to be compared (Table S1). We did not find a statistically significant difference in these variables based on teachers' ethnic backgrounds, $F(8, 204) = .611, p = .606$; Wilk's $\Lambda = 0.940$, partial $\eta^2 = .03$ (see Table S1). Subsequently, participants that indicated another or an additional ethnic affiliation than Dutch were grouped together for easier interpretation of results.

Table S1

MANOVA Results for Ethnic Minority Groups

	SS	Df	Mean Square	F	Sig.	η^2
Perspective taking	28.032	2	14.016	1.200	.305	.022
Multicultural attitudes	62.052	2	31.026	.580	.562	.011
CRT: Cultural sensitivity	17.285	2	8.643	.236	.790	.004
CRT: Social sensitivity	11.048	2	5.524	.520	.596	.010

Note. CRT = Culturally Responsive Teaching.

Item Reduction

Items that reflected teachers' sensitivity to their students' culture specific (e.g., "I use the cultural background of my students to make learning meaningful) and general needs -including both academic and social (e.g., "I adjust instructions to cater to the needs of my students"; "I help students establish positive relationships with their classmates") were retained for further analyses. The items that were not representative of the Dutch educational context, that were too subject specific, were about the home life of the students, or were too similar to other items that are retained were excluded from further analyses. For instance, the item "I identify ways in which standardized tests can be prejudiced against culturally different students" does not apply to the Netherlands context as in the Netherlands, we have a nation-wide standardized test CITO, and individual teachers do not have any control over its content. Additionally, "I tell about the achievements of culturally different others in Math", for example, is too subject specific to be a valid measure of an overall culturally responsive teaching practice.

Conceptually, we retained items that fell under two categories that we subsequently named 1) cultural sensitivity and 2) social sensitivity. In order to verify this factor structure, we performed a factor analysis with 2 forced factors as detailed below.

Factor Analysis

The value of Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was .78, indicating that the strength of the relationships among items was high; and, the Bartlett's Test of Sphericity was significant ($\chi^2 (190) = 644.521, p < 0.001$). The data hence met the assumptions of factor analysis.

Table S2

Pattern Matrix Factor Loadings

	Factor 1	Factor 2
CRT_1	-.054	.644
CRT_2	-.112	.565
CRT_3	-.023	.284
CRT_5	.652	-.021
CRT_7	.016	.406
CRT_12	.505	.239
CRT_13	.712	-.077
CRT_16	.592	.081
CRT_19	.478	-.041
CRT_21	-.011	.634
CRT_26	.080	.463
CRT_27	.664	-.021
CRT_28	.358	.014
CRT_30	.521	-.072
CRT_31	.418	.198
CRT_34	.200	.397
CRT_35	.700	-.073
CRT_37	.298	.249
CRT_38	.363	.236
CRT_40	.135	.538

Note. CRT = Culturally Responsive Teaching.

The fit of a 2-factor model was examined using the Maximum Likelihood extraction method. An Oblimin rotation was carried out as factors were expected to be correlated. The model fitted the data well²⁹ with $\chi^2 (151) = 217.508, p < 0.001$. The first factor had an eigenvalue

²⁹ We first discovered the factor structure with an exploratory factor analysis ($\chi^2 (100) = 100.774, p = .459$); and, also examined a 3-factor solution ($\chi^2 (133) = 166.962, p = .025$). The 2-factor solution fits our data the best ($\chi^2 (151) = 217.508, p < 0.001$).

of 5.338 and accounted for 26.7% of the variance in the data. Factor two had an eigenvalue of 2.106 and accounted for further 10.6% of the variance. Factor loadings are presented in Table S1, and the retained and excluded items are presented in Tables S2 and S3 respectively.

Table S3

Culturally Responsive Teaching Items that were Retained

Factor 1 items	Cultural Sensitivity
CRT_5	Identify aspects in which the school culture (for example, values, norms, and practices) differs from the home culture of my students.
CRT_12	Establish community between students when my class exists of students from various backgrounds.
CRT_13	Use the cultural background of my students to make learning meaningful.
CRT_16	Obtain information regarding the cultural background of my students.
CRT_19	Design a classroom environment with attributes that represent a variety of cultures.
CRT_27	Revise educational materials to improve its' representation of cultural groups.
CRT_28	Critically study the curriculum in order to determining whether it does or does not strengthen negative cultural stereotypes.
CRT_30	Design tasks in the classroom in a way that helps improve the understanding of students studying Dutch.
CRT_31	Communicate with the parents of students studying Dutch about their child's achievements.
CRT_35	Make use of examples that are relatable for students from culturally different backgrounds.
CRT_38	Make use of my students' interests to make learning meaningful to them.
Factor 2 items	Social Sensitivity
CRT_1	Adjust instructions to cater to the needs of my students.
CRT_2	Obtain information regarding the academic strengths of my students.
CRT_3	Assess whether my students rather work alone or in a group.
CRT_7	Judge my students' learning using various kinds of tests.
CRT_21	Obtain information regarding my students' academic weaknesses.
CRT_26	Help students establish positive relationships with their classmates.
CRT_34	Use a learning preference survey to obtain information on how my students prefer to learn.
CRT_37	Obtain information concerning my students' academic interests.
CRT_40	Develop education according to my students' developmental needs.

Note. CRT = Culturally Responsive Teaching.

Table S4*Culturally Responsive Teaching Items that were Excluded*

Items	
CRT_4	Assess whether my students are comfortable with competing with other students.
CRT_6	Implement strategies to minimize the effects of the mismatch between my students' home culture and the school culture.
CRT_8	Obtain information regarding the home life of my students.
CRT_9	Establish a feeling of trust with my students.
CRT_10	Establish positive relationships between home and school.
CRT_11	Employ a variety of educational methods.
CRT_14	Use my students' common knowledge to help them understand new information.
CRT_15	Identify how the way in which students communicate at home can differ from the school's norms.
CRT_17	Teach students about their cultures' contributions to science.
CRT_18	Greet students studying Dutch with a phrase from their mother tongue.
CRT_20	Establish a personal relationship with my students.
CRT_22	Praise students studying Dutch for their achievements, using a phrase in their mother tongue.
CRT_23	Identify ways in which standardized tests can be prejudiced against linguistically different students.
CRT_24	Communicate with parents regarding the progress of their child's education.
CRT_25	Structure parent-teacher conferences in a way in which this meeting is not intimidating to parents.
CRT_29	Develop a lesson, which shows how other cultural groups have made use of mathematics.
CRT_33	Identify ways in which standardized tests can be prejudiced against culturally different students.
CRT_36	Explain new concepts using examples from my students' daily lives.
CRT_39	Implement cooperative learning activities for students who prefer to work in groups.

Note. CRT = Culturally Responsive Teaching.