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EFFICACY OF MULTICULTURAL EDUCATION FOR PRESCHOOL CHILDREN A Domain-Specific Approach

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The efficacy of multicultural curricula for the development of “racial expertise” was examined in 79 preschool children. Children in preschools with multicultural and emergent curricula ($n = 43$) were compared with children in preschools with multicultural but no emergent curricula ($n = 20$) and children in preschools with neither multicultural nor emergent curricula ($n = 16$) in their responses to the Multi-Response Racial Attitude Scale and domain-specific measures of racial groups knowledge. Results suggest children in preschools with both multicultural and emergent curricula have more domain-specific racial knowledge but not less biased attitudes than other preschool children.

Keywords: multicultural; preschool; race; domain-specific

Since the 1940s, numerous studies have reported that young children not only differentiate people on the basis of skin color but display a pro-White/anti-Black bias as well (Augoustinos & Rosewarne, 2001; Boswell & Williams, 1975; Clark & Clark, 1947; Morland, 1962). Why they have this bias remains a subject of some debate (Cameron, Alvarez, Ruble, & Fuligni, 2001; Lerner & Buehrig, 1975), but an early view, espoused by Williams (1966, 1969; Williams & Roberson, 1967), is that children first learn that the color white is associated with good things and black is associated with bad things and then generalize from colors to people. Williams and colleagues were able to demonstrate this association between evaluations of color and people across a variety of ages and racial groups and suggested that the ubiquity of this phenomenon may stem from children’s daily experiences with the light-dark cycle of day and night, with the light of day associated with greater comfort than the dark of night (Williams, Boswell, & Best, 1975).

Whatever the cause, that children evaluate white and black differently has been well documented. Because children’s pro-White/anti-Black bias may be manifested as racial prejudice, intervention strategies have been devised to reduce it. Attempts to change the connotative meaning of color words in preschool and elementary school children through classical (Parish, 1974; Parish & Fleetwood, 1975; Parish, Fleetwood, & Lentz, 1975) and operant (Best, Smith, Graves, & Williams, 1975; Elliot & Tyson, 1983; P. A. Katz & Zalk, 1978; Spencer & Horowitz, 1973; Traynham & Witte, 1976) conditioning techniques were somewhat successful but suggest that for the beneficial effects to be maintained, frequent reinstatement would probably be necessary.

The inclusion of multicultural curricular and antibias components in classrooms is another type of intervention aimed at reducing children’s biases (Banks, 1995; Derman-Sparks & ABC Task Force, 1989). For the most part, these curricula have a theoretical basis in learning theory, broadly defined, and are not informed by research and theory relevant to

attitude change (Bigler, 1999). The basic approach of multicultural curricula is to present, through various media, depictions of racial and ethnic minority figures in counterstereotypic activities and circumstances and described using positive adjectives. In this way, these curricula do not differ very much from the conditioning interventions mentioned above. However, beyond this basic approach, multicultural curricula vary considerably. Banks (1995) described the different ways teachers might integrate information about racial and ethnic diversity into their classrooms. They can simply identify the contributions made by minority groups or individuals without altering their teaching plan. Somewhat better is the "additive approach," in which the basic curriculum is expanded with units specifically about minority groups. Better yet is the transformative approach that requires a reconfiguration of the curriculum so that issues are at the core and are examined from the various perspectives represented in the population. At the preschool and early elementary levels, Derman-Sparks (1993-1994) suggests allowing the interests and concerns of the children to guide teachers' integration of antibias and diversity activities. In this way, the activities will be more meaningful to the children and thereby contribute to their development of empathy and sense of responsibility for self and others.

Several reviews of the effectiveness of multicultural curricula have been published recently (Aboud & Levy, 2000; Banks, 1995; Bigler, 1999; Pate, 1995; Short & Carrington, 1996). These reviews indicate that multicultural and other curricula designed to reduce prejudice come in a variety of forms that do not mesh completely with the approaches described above. They also reveal that beneficial effects are not consistently found and, in some instances, attitudinal change was in the wrong direction. In addition, there is some suggestion that younger children might be more susceptible to the interventions, but little research has been directed toward examining the effects of multicultural curricula on preschoolers' attitudes. The potential for multicultural curricula to expand children's knowledge base concerning race (with or without attitude change) has also not been explored.

Much of the research on preschool children's knowledge, problem solving, and concept development suggests that their reasoning is constrained by egocentrism, centration, transductive logic, and the like (Piaget, 1970). Years of cognitive training studies (e.g., Anderson & Clark, 1978; Brainerd, 1976; Golomb & Bonen, 1981; Kuhn, 1974) suggest that modifying young children's reasoning is possible, though not an easy task. This is important because Aboud (1988) and her colleagues (e.g., Aboud & Skerry, 1984; Doyle, Beaudet, & Aboud, 1988), Bigler and Liben (1993), and P. A. Katz (1983) have reported that children's reasoning about race varies with their cognitive level. The same has been found in children's reasoning about gender (Bem, 1989; Bigler & Liben, 1992; Kohlberg, 1966; Martin & Halverson, 1981). Generally, children under the age of 5 years rely on relatively superficial characteristics for classifying people into gender and racial groups; they are fairly rigid in their notions of "appropriate" characteristics of males and females, Blacks and Whites, and their understanding of the constancy of race and gender is incomplete. Bar-Tal's (1996) work on Jewish children's concept of Arab is consistent with this cognitive perspective and adds to it the role that culture and experience can play in children's concept formation and elaboration. It is important that Bar-Tal reported that Jewish children's knowledge of Arabs was enhanced by contact with Arabs in their school and/or neighborhood (consistent with findings of some of the conservation training studies), and their characterization of Arabs became increasingly negative with age (and, presumably, with increased exposure to negative comments about Arabs), suggesting that social learning also plays a part in children's

understanding of race and that multicultural curricula could be effective in influencing the way young children think about race and racial differences.

Although there is considerable evidence supporting the cognitive perspective, it has been challenged recently by Hirschfeld (1996; 2001), who contends that young children's thinking about race is not subject to the same limitations as is their thinking about gender. Rather, he argues, children's knowledge of race is domain specific, "theorylike . . . [and] governed by an innately preorganized acquisition device" (Hirschfeld, 2001, p. 108) similar to the language acquisition device described by Chomsky (1965). The protocol Hirschfeld used to collect the data supporting his position is different in an important respect from studies of racial and gender constancy (i.e., he did not include a transformation), and so it is not clear that he and, for example, Aboud were studying the same phenomenon. Still, his data reveal differences in the reasoning of 3- to 4-year-olds compared to 7-year-olds, consistent with other research in the area. And, his notion of the domain specificity of children's racial knowledge is quite interesting. The issue of innateness aside, there is evidence that preschool-age children, in the preoperational stage of cognitive development, display individual differences in their degree of "expertise" in particular domains of knowledge (Chi, Hutchinson, & Robin, 1989; Soederberg & Mebert, 1996).

Chi and colleagues (Chi et al., 1989; Chi & Koeske, 1983; Gobbo & Chi, 1986) did a series of studies comparing young children who were dinosaur experts and dinosaur novices. Among 7-year-olds, expert children's comments regarding dinosaurs were found to contain more causal inferences (using connecting words such as *because* and *if*) than did those of novice children (who were presumably at the same cognitive stage as the experts). Furthermore, they found that the expert children were more likely than the novice children to change topics while making comments. For example, when discussing the dinosaur's defense mechanism, the expert made causal inferences as to its habitat or physical appearance, which may have direct implications for the dinosaur's defense.

In an additional experiment, Gobbo and Chi (1986) found that expert children often made implicit attributions when shown pictures of families of dinosaurs and concluded that the visual depiction of the dinosaurs triggered other associated knowledge and attributes. In fact, both expert and novice children offered the same number of propositions regarding the explicit features, but the expert children made four times as many implicit inferences. In addition, expert and novice children differed in the number of comparisons made among dinosaurs. Not only did experts use more comparisons than novices, but also their comparisons included *similarities* among dinosaurs as well as *differences*. Gobbo and Chi interpreted this finding as indicating that experts' dinosaur concepts are both more interrelated and more differentiated than those of the novices. Also, when inferring information regarding a dinosaur, expert children made contrastive statements by using a single feature in both an inclusive and exclusive manner. Gobbo and Chi speculate that the use of these contrastive statements is based on the formation of hierarchical structures and that the dinosaurs are coalesced into higher order categories if members of all the families share a common attribute.

In a final study concerning how knowledge is used to learn new concepts, Chi et al. (1989) found that the advantage of having domain-specific knowledge is that experts are able to make inferences about *new* dinosaurs that are dinosaur specific. Novices, on the other hand, relied more on general world knowledge in formulating inferences.

These findings suggest that in their domain of expertise, experts reason in a way that is beyond what would be expected from their presumed cognitive stage. Specifically, expert

children demonstrated the ability to classify on multiple dimensions (a concrete operational characteristic and one known to be associated with reduced social stereotyping; Bigler & Liben, 1992) earlier than would be expected from Piagetian theory. Similarly, Soederberg and Mebert (1996), after controlling for cognitive characteristics and general intelligence, found that emotion experts outperformed novices on a task that asked them to look at a set of pictures and describe each in terms of what it depicted with respect to the characters' feelings, what the characters were doing just prior to the picture, and what happened just after the picture.

Little is known about how experts become experts in any domain. Certainly, availability of information in the domain would be important. It might be expected that experiencing a multicultural curriculum (whatever the type, i.e., contributory, additive, transformative, or a mix) would contribute to the development of expertise in the domain of racial and cultural diversity. This type of education offers children the opportunity to develop a structured and differentiated knowledge base from which to make inferences about people of different cultures. For this reason, the children may be able to transcend several stage-related cognitive limitations within the specific domain of race or culture. First, they may be able to make comparisons about various racial groups that include similarities as well as differences and use inclusive as well as exclusive information. This could result in bias reduction, but could also result in higher levels of stereotyping. Second, with regard to novel racial stimuli, they may be able to use domain-specific knowledge in making higher-order inferences rather than relying on world knowledge (which may include social biases). A young expert may, for example, know about variations among Chinese, Japanese, and Koreans in holiday traditions, whereas a novice might simply assume everyone celebrates the same holidays in the same ways.

This study tested the efficacy of multicultural preschool programs in the development of domain-specific knowledge and on the formation of attitudes toward racial groups. It was hypothesized that children attending multicultural preschools will have more domain-specific knowledge regarding people and races than will children attending preschools without multicultural curricula. It is also hypothesized that children attending multicultural preschools will have less biased racial attitudes than children attending preschools without multicultural curricula.

METHOD

PARTICIPANTS

Out of a possible 132 4-, 5-, and 6-year-old children attending six different preschools in southern New Hampshire, a sample of 79 children, 36 females and 43 males, was recruited based on the return of informed consent forms by parents or legal guardians. The participants' ages ranged from 43 months to 78 months with a mean age of 64.1 months. The majority of participants in the sample were Caucasian (84.8%). The remainder of the sample was 8.7% Asian, 2.2% Native American, and 4.3% other. With respect to religion, 28.3% were Catholic, 23.9% Protestant, 4.3% Jewish, 2.2% Greek Orthodox, 2.2% Quaker, 15.2% none, and 23.9% other. The majority of the parents were married (64.6%) with an educational level ranging from less than high school degree through doctorate degree (median = bachelor's degree). The income level ranged from less than \$10,000 per year to more than \$100,000, with a median of \$50,000 to \$59,999.

MATERIALS

Child Care Center Questionnaire

The director of each of the six child care centers was asked to fill out a curriculum questionnaire in which the following was assessed: (a) educational philosophy, (b) use of pre-packaged and/or emergent curriculum, (c) inclusion of a multicultural component in the curriculum, (d) inclusion of an antibias component in the curriculum, (e) number and type of holidays celebrated at the center, (f) enrollment of and accommodations for special-needs children, (g) educational level of teachers and administrative staff, and (h) NAEYC (National Association for the Education of Young Children) accreditation, which is currently voluntary. Forms of multicultural curricula were described above; an emergent curriculum is one in which the interests of the children in the class drive the issues covered (Jones & Nimo, 1994; New, 2000).

Cognitive Abilities Measures

General intellectual functioning, as reflected in verbal skill, was assessed with the Peabody Picture Vocabulary Test (PPVT; Dunn & Dunn, 1981). Dunn and Dunn (1981) report internal consistency (split-half reliability) of the PPVT for children ages 4 years through 6 years 11 months to range from .70 to .84. Coefficient of equivalence (reliability coefficients for 1-week retest) for the above age group ranges from .76 to .77. Also, coefficient of stability (reliability coefficients for delayed retest) for the above age group ranges from .58 to .77. In addition, as a measure of validity, Dunn and Dunn report the PPVT to have correlations ranging from .20 to .89 with other vocabulary tests (e.g., Stanford-Binet and Wechsler Intelligence Scale for Children). The PPVT was used here because of its ease of administration and because the measures of interest are largely verbal, and the need to control for individual differences in verbal skills was anticipated.

In addition, cognitive abilities were assessed by giving the participants two Piagetian-type conservation tasks. The first was a task involving the conservation of mass as described by White, Michel, Butcher, and Mebert (1978) in which two balls of Playdough, equal in amount and weight, were presented to the children. Equality of amount was first established to the participant's satisfaction by either adding or subtracting from one or both balls. Then the following transformations were made: (a) ball into sausage, (b) ball into pancake, (c) ball into three little balls. After each transformation, the participant were asked the following question: "Do you think the ball and the (sausage, pancake, three balls) have the same amount of Playdough, or do you think that one has more or less than the other?" Transformed objects were returned to their original shape (ball) after each transformation and the judgment of equality of amount was again established to the participant's satisfaction. Transformations were performed on alternate balls to minimize position effects. Participants were scored on the following point system: 0 = no correct responses, 1 = one correct response, 2 = two correct responses, and 3 = three correct responses. Participants were classified as understanding conservation when they made correct judgments on all three transformations.

The second conservation task was a conservation of gender or gender constancy task, adapted from Bem (1989), in which three pictures of a female child and three pictures of a male child taken from a paper doll book (Holden, 1985) were used as gender stimuli. The female photos included (a) a gender-consistent picture in which her gender is obvious (i.e., wearing underwear only and having long hair; (b) a gender-inconsistent picture in which her

gender is not so obvious (i.e., wearing a football uniform and helmet); and (c) another gender-consistent picture in which her gender is again obvious (i.e., wearing a pink dress and having long hair again). The male photos included (a) a gender-consistent picture in which his gender is obvious (i.e., wearing underwear only and having short hair); (b) a gender-inconsistent picture in which his gender is not so obvious (i.e., wearing a pink dress and bonnet); and (c) another gender-consistent picture in which his gender is again obvious (i.e., wearing a blue shirt and long pants and having short hair again). When the first photo (gender consistent) was presented, gender was established with the child. Next, the gender-inconsistent photo was shown and the child was asked, "If the child in this photo puts on a dress/football uniform, what does the child look like—a boy or a girl?" After responding, the child will be asked, "What is the child in this photo *really*—a boy or a girl?" The third photo was then shown to the participant and he or she was asked, "Now what does the child in the photo look like—a boy or a girl?" Then, "What is the child in this photo *really*—a boy or a girl?"

The criterion for passing the gender constancy task was correctly answering the questions all four times asked. In other words, the participant must correctly identify the *real* sex of both the gender-consistent and gender-inconsistent photo. As in the mass conservation task, the participants were given a point for every correct response.

Conservation, rather than classification, was assessed because conservation is a hallmark of concrete operational functioning (Piaget, 1970) and because it is distinct from the other tasks the children were given. A conservation of gender, rather than race, task was given because conservation of race appears considerably later than does conservation of gender (Aboud, 1984).

Attitude Measures and Scoring

The Multi-Response Racial Attitude Scale (MRA; Doyle & Aboud, 1995), adapted from the Preschool Racial Attitude Measure II (PRAM II; Williams, Best, Boswell, Mattson, & Graves, 1975) was administered. This scale requires respondents to match attributes (10 positive, 10 negative, and 4 neutral) with target children. In this case, the target children were Black, White, and Japanese, and each was pictured on a box and named by the experimenter. Matching was accomplished by placing an attribute card in a target child's box. Each attribute was depicted on three cards, so participants could match each attribute with each target child. Attributes were presented verbally with a short vignette. An example is, "Some children are naughty. They often do things like draw on walls with crayons. Who is naughty?" Participants were given three cards with a picture of walls that had been drawn on with a crayon and were asked to place a card in the box of each child the statement described. The positive attributes were *clean, wonderful, healthy, good, nice, happy, friendly, kind, helpful, and smart*. The negative attributes were *unfriendly, mean, dirty, cruel, stupid, sick, naughty, sad, and bad*, and the four neutral attributes were *likes to run, likes to sing, likes to watch TV, and likes music*.

Doyle and Aboud (1995) report internal consistency on the MRA ranging from .79 to .91. Test-retest reliability across a 4-month interval ranged from .56 to .82. However, test-retest reliability is of questionable value for a scale that measures a characteristic that is likely to change with development and/or experience.

Three positive and three negative attribution scores were calculated from the MRA, one for each target character. The possible range was 0 to 10. Three additional scores were calculated. One is a *bias* score, which was calculated based on the sum of positive evaluations of

White children, negative evaluations of Black children, and negative evaluations of Japanese children. The second is a *counterbias* score, which was calculated based on the sum of negative evaluations of White children, positive evaluations of Black children, and positive evaluations of Japanese children. The third is a *degree-of-similarity score*, which represented the total number of attributions that were made to all three racial characters (i.e., a card depicting a particular attribution was placed in all three boxes).

Perceived similarity within and between racial groups was also assessed using the perceived similarity technique of Doyle and Aboud (1995). Six pairs of photos of same-sex children (who were the same sex as the participant) taken from a UNICEF children's book (Kindersley & Copsey, 1995) were presented. Pairs consisted of racially same children and racially different children, that is, two White boys or girls, two Black boys or girls, two Japanese boys or girls, a White and Black boy or girl, a White and Japanese boy or girl, and a Black and Japanese boy or girl. A 60-centimeter board was placed in front of each participant. The participants were asked to take each pair of children and tell how similar to or different from each other they are by placing similar characters close to each other on the board and different characters far from each other. Numerical marking on the bottom of the board ranged from 1 to 60 so the interviewer could easily code the distance between the pairs. To ensure that children understood the task, they were shown three pictures, one of yellow flowers, one of red flowers, and one of a red car. The children were asked to place the two pictures that are similar closer together and two that were not similar further away. After it was determined that the participant had a clear understanding of the procedure and of the meaning of similar and different, each pair of test pictures was given, one at a time. The average score was tallied, with perceived between-group similarity scored as 60 minus the mean of the three pairs of different group pairs (i.e. White and Black, White and Japanese, and Black and Japanese). Perceived within-group similarity was scored as 60 minus the mean of the three pairs of same group pairs (i.e. White and White, Black and Black, and Japanese and Japanese). Doyle and Aboud report internal consistency for between-group similarity to be .73 and .84 for kindergarten and Grade 3 participants, respectively, and for within-group similarity to be .80 and .76, respectively. They also reported test-retest reliability across a 4-month interval for Grade 4 to be from .62 to .74.

Racial attitudes of primary caregivers were assessed using a measure developed by I. Katz and Hass (1988), in which 10 pro-Black (e.g., "Sometimes Black job seekers should be given special consideration") and 10 anti-Black (e.g., "On the whole, Black people don't stress education and training") statements are listed and respondents indicate the degree to which they agree or disagree with each using a 6-point rating scale. Katz and Hass reported alpha coefficients of .73 and .80 for the pro-Black and anti-Black scales, respectively. For this study, the measure was extended with 10 pro-Asian and 10 anti-Asian statements.

Racial Awareness, Differences, and Similarities Tasks (Domain Knowledge Task)

Racial awareness was measured by placing pictures of one White boy, one Black boy, one Japanese boy, one White girl, one Black girl, and one Japanese girl in front of the participants and asking, "Which one is the (White, Black, Japanese) boy/girl?" until each race had been assessed. The final question was "What are you—a White boy/girl, a Black boy/girl, or a Japanese boy/girl?" The participant was given 1 point for every correct answer, with the possible racial awareness scores ranging from 0 to 7.

Participants were also shown pairs of racial stimuli, White boy or girl and Black boy or girl, Black boy or girl and Japanese boy or girl, and White boy or girl and Japanese boy or girl. After the presentation of each pair, the participants were asked, "Can you tell me how these two children are similar?" and "Can you tell me how these two children are different?" Order of presentation of racial stimulus pairs was randomized to control for order effects and the number of similarities and differences given were recorded.

PROCEDURE

The participants were tested in two half-hour sessions separated by no more than 4 weeks. Participants were tested at their respective child care centers during regular school hours. Each was taken to a quiet room for individual testing. In the first session, the participants were administered the mass conservation task, the gender constancy task, the PPVT, and the MRA, in that order. In the second session, the participants were administered the racial awareness task, the perceived within-group and between-groups similarities task, and the racial similarities and differences tasks, in that order.

RESULTS

Of the 79 questionnaires given to each primary caregiver, 45 were returned (57%). (It is possible that the primary caregivers not returning the questionnaires did so for social desirability reasons.) A MANOVA was performed to determine if there were differences in bias scores, counterbias scores, racial awareness scores, MRA scores, perceived within- and between-group similarities scores, PPVT scores, and total similarities and differences by returned versus not returned primary caregiver questionnaires. Results revealed no significant main effect for return, $F(15, 62) = 1.351, p > .05$. Hence, all children, regardless of primary caregiver response, were included in subsequent analyses.

Based on the responses to the center curriculum questionnaire, the six centers were grouped into the following three categories, each of which included two of the centers: (a) centers with both an emergent curriculum and a multicultural curriculum (Group 1, $n = 43$), (b) centers with a multicultural curriculum but no emergent curriculum (Group 2, $n = 20$), and (c) centers having neither an emergent curriculum nor a multicultural curriculum (Group 3, $n = 16$). One center in Group 1 and one in Group 3 were NAEYC accredited. None of the centers used prepackaged curricula, and all of the centers with multicultural curricula included antibias components in their activities. There was no evidence of a relation between center type and participant ethnicity, $\chi^2(2) = 2.52, p > .20$.

There was a broad age range in the sample (i.e., 49 to 78 months), but a one-way ANOVA revealed no group differences in age of participants, $F(2, 76) = 0.51, p > .05$; Group 1 $M = 64.67, SD = 7.51$; Group 2 $M = 63.00, SD = 8.05$; Group 3 $M = 65.31, SD = 5.86$. However, because age was related to several of the dependent variables (see Table 1), it was used as a covariate in subsequent analyses.

Ninety percent of the participants in this sample were not conserving mass, yet 76% were conserving gender. Performance on the conservation tasks was not associated with center type, $\chi^2(2) = 0.19$ for mass and 2.68 for gender. Due to the lack of variability in these scores, they were not considered further in any analyses. PPVT scores were normally distributed and ranged from 67 to 148 ($M = 110, SD = 14.69$). As with age, no evidence of center-type differences was found for these scores, $F(2, 76) = 0.72, p > .05$; Group 1 $M = 111.86, SD =$

TABLE 1
Correlations Between Subscales of Attitudes of the Parents and Attitudes of the Children

<i>Children's Attitudes</i>	<i>Parents' Attitudes</i>			
	<i>Positive Black</i>	<i>Positive Japanese</i>	<i>Negative Black</i>	<i>Negative Japanese</i>
Pro-Black	-.071	-.160	.204	.345**
Pro-Japanese	-.176	-.169	.175	.276
Anti-Black	.310**	.208	.082	.137
Anti-Japanese	-.099	.120	.136	-.170

** $p < .05$.

TABLE 2
Mean Number of Similarities and Differences Given by Children in Each Type of Center

	<i>Similarities</i>		<i>Differences</i>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Multicultural/emergent	1.2540 _a	0.855	1.3968 _a	0.583
Multicultural/no emergent	0.6500 _b	0.609	0.8667 _b	0.495
No multicultural/no emergent	0.5833 _b	0.488	1.2083 _{ab}	0.504

NOTE: Means in column 1 that do not share subscripts differ at the $p < .05$ level. Means in column 2 that do not share subscripts differ at the $p < .01$ level.

14.81; Group 2 $M = 108.29$, $SD = 12.94$; Group 3 $M = 107.44$, $SD = 18.13$. PPVT was used as a covariate in subsequent analyses to control for general (verbal) intelligence.

GROUP DIFFERENCES IN DOMAIN-SPECIFIC KNOWLEDGE (HYPOTHESIS 1)

To test whether children attending multicultural preschools have more domain-specific knowledge regarding people and races than children attending preschools without multicultural curricula, racial awareness scores were analyzed in a one-way ANCOVA with age and PPVT as covariates. No evidence of center type differences was found, $F(2, 74) = 1.56$, $p > .20$; Group 1 $M = 4.95$, $SD = 1.77$; Group 2 $M = 5.19$, $SD = 2.20$; Group 3 $M = 4.37$, $SD = 2.16$.

The number of similarities and differences children gave for pairs of racial stimuli were analyzed in a 3 (center type) \times 3 (stimulus pair) \times 2 (characteristic type) mixed-model ANCOVA with repeated measures on the second and third factors. The only significant finding was a center-type main effect, $F(2, 73) = 7.19$, $p < .005$. As shown in Table 2, across stimulus pairs, children in multicultural/emergent centers offered more similarities and more differences than did children in the other two groups (planned comparisons for Group 1 vs. 2: $t = 3.45$, $p < .001$; Group 1 vs. 3: $t = 2.63$; $p < .01$).

Perceived within-group similarities (i.e. White/White, Black/Black, and Japanese/Japanese) and between-group similarities (i.e. White/Black, Black/Japanese, and White/Japanese) responses were analyzed in separate 3 (center type) \times 3 (stimulus pair) mixed-model ANCOVAs. No significant results emerged from these analyses (all $F_s \leq 1.92$).

TABLE 3
Mean Negative and Positive Attributions for Each Racial Stimulus by Center

	<i>Japanese</i>		<i>Black</i>		<i>White</i>	
	M	SD	M	SD	M	SD
Negative						
Center Category 1	4.24	3.83	6.98	3.54	4.43	3.78
Center Category 2	5.14	3.48	6.52	3.09	4.90	3.67
Center Category 3	7.19	2.54	7.62	2.94	6.38	3.69
Positive						
Center Category 1	8.74	1.81	7.17	3.23	9.26	2.07
Center Category 2	9.48	3.67	8.62	3.53	9.52	3.52
Center Category 3	7.37	3.59	6.75	3.64	8.25	2.74

GROUP DIFFERENCES IN RACIAL ATTITUDES (HYPOTHESIS 2)

To test whether children attending multicultural preschools have less racially biased attitudes than do children attending preschools without multicultural curricula, 3 (center type) \times 3 (racial stimulus) \times 2 (attribute valence) mixed-model ANCOVAs were performed on the positive and negative attributions children assigned to each racial stimulus. The center main effect was not significant, $F(2, 74) = .41$, but there was a valence main effect, $F(1, 74) = 7.36$, $p < .01$, and a center type \times attribute valence interaction, $F(2, 74) = 5.62$, $p < .01$. These were the only significant results in this analysis. As shown in Table 2, children, particularly those in multicultural curriculum preschools, provided more positive than negative attributes to all stimuli. Children in Group 3 offered significantly fewer positive and significantly more negative attributes than did children in the centers with multicultural curricula, $t_s(76) = 2.06$ and 2.02 , respectively, $ps < .05$.

In addition, a MANCOVA was performed that resulted in no significant center differences in the MRA Scale degree of similarity score, bias score, and counterbias score, Wilks's $F(6, 144) = .68$, $p > .05$.

ASSOCIATIONS AMONG VARIABLES

Both bias and counterbias scores were significantly negatively correlated with age, $r(77) = -.38$, $p < .001$, and $r(77) = -.41$, $p < .001$, respectively. For the three racial stimuli, positive attributions were positively correlated, as were negative attributions, and positive attributions were negatively correlated with negative attributions (see Table 4).

Racial awareness was significantly negatively correlated with bias scores and with age, $r(77) = -.33$, $p < .01$, and $r(77) = .33$, $p < .01$, respectively; greater racial awareness was associated with lower bias and older age.

PARENT-CHILD ATTITUDE ASSOCIATIONS

Because a substantial number of parents (30 out of 79) did not return the Katz and Hass racial attitude questionnaire, the only analyses conducted with scores derived from it were simple correlations to examine the association between parents' and children's attitudes. These correlations are in Table 1. Only two seemingly spurious correlations were significant: the parents' anti-Black scores were positively correlated with the children's positive

TABLE 4
Intercorrelations of Subscales of Children's Multi-Response Racial Attitude Scores and Correlations Between Subscales and Age

	Race Awareness	Age	Positive White	Positive Black	Positive Japanese	Negative White	Negative Black	Negative Japanese	Bias	Counterbias
Race awareness		.334***								
Age										
Positive White										
Positive Black										
Positive Japanese										
Negative White										
Negative Black										
Negative Japanese										
Bias										

* $p < .10$. ** $p < .05$. *** $p < .01$.

Black score, $r(44) = .310, p < .05$, and the parents' pro-Black scores were positively correlated with the children's' negative Japanese scores, $r(43) = .345, p < .05$. All other correlations were not significant.

DISCUSSION

As stated above, one purpose of this study was to examine whether children attending preschools with a multicultural curriculum have more domain-specific knowledge regarding people and races than do their counterparts in centers without such a curriculum. Toward this end, participants were asked to generate lists of similarities and differences between racial groups. Children in centers with both multicultural and emergent curricula produced almost twice as many similarities and differences as did the children in multicultural only and neither multicultural nor emergent curriculum centers. Because verbal intelligence was controlled, this effect cannot be attributed to intelligence or language ability.

The greater number of responses given by the emergent and multicultural participants may reflect a more structured and differentiated knowledge base. Support for this interpretation can be found in Gobbo and Chi (1986). As they found with the dinosaur experts, perhaps when a particular concept node is activated, several related concepts are also activated at high strength, compelling the participant to continue expressing them. The participants in this study were given a very general question such as, "Can you tell me what is similar about these two children?" and given as much time as they felt they needed to answer. Therefore, it can be argued that those producing many responses felt "compelled" to do so because of their knowledge base. And the fact that the emergent and multicultural participants had significantly more responses for both *similarities* and *differences* rather than more of one than the other also mirrors findings from Gobbo and Chi in that dinosaur experts used more comparisons than did novices, and their comparisons included more similarities and differences. These findings also suggest that expertise in children may be promoted through preschool curricula, particularly if activities are organized around the interests and concerns of the children, as they are in emergent classrooms.

It would be interesting to look into other aspects of the domain-specific knowledge of the emergent and multicultural participants. An important issue is whether exposure to this type of curriculum contributes to children's awareness and appreciation of individual as well as group differences (and similarities). For instance, can children with domain-specific knowledge of races generate more similarities and differences *within* a particular race? In other words, do children with such knowledge see people of the same race as being different as well as being similar? This is an important issue with respect to the preschool goal of multicultural curricula, that is, the reduction of prejudice.

An important note that needs to be addressed is that it appears the combination of two types of curricula is what accounts for the significant center differences found in the data. It is not clear, however, whether it is the actual combination of multicultural and emergent curricula that produces the effect. It may be that the preschools in the multicultural-curricula-only group do not have a true multicultural curriculum. They may actually be considered as having what the education literature calls a "pseudomulticultural" curriculum, which is characterized as having isolated and discontinuous classroom units that examine cultures as opposed to ongoing, daily, and integrated formal and informal classroom activities (Boutte & McCormick, 1992). Alternatively, what may be important in the multicultural and emergent centers is the emergent feature, rather than the multicultural components. To

clarify the picture, future research should include centers that are identified as emergent without any specific multicultural or antibias components.

There were no significant center differences in perceived within-group similarities and perceived between-group similarities, nor were there center differences in positive and negative attributions given to the three racial stimuli. Overall, however, children provided significantly more positive than negative attributions, and this was particularly true for those children experiencing a multicultural curriculum. Perhaps a major benefit of such curricula is their tendency to foster a view of all people in a positive light.

We relied on center directors' responses in classifying these preschools' curricula. A more detailed evaluation of the materials used in any instructional activities might have resulted in a different classification scheme for these six centers, and more prevalent center main effects. Still, we have provided some evidence that even in the preschool years, children's domain-specific knowledge may be influenced by their experiences in school, and this supports Ramsey's (1991) contention that preschool-aged children can be influenced to develop positive attitudes toward other racial groups.

Although not the main focus of this study, worthy of note is a finding that is consistent with Aboud's social cognitive theory regarding children's biases. Doyle et al. (1988) found that children's racial biases were a function of cognitive development, with younger children having stronger biases than older children. In this study, the children's bias scores were significantly negatively correlated with age; younger children had higher bias scores than older children.

Counterbias scores, computed by summing number of negative White attributions and positive Black and Japanese attributions were also negatively correlated with age. Based on Aboud's theory, it was expected that counterbias scores would increase with age, because older children are expected to value their own group less favorably (giving more negative White attributions) than younger children and value other groups more favorably. Examination of the correlations in Table 4 indicates that there was no association between age and positive attributes for any racial stimulus, but all of the negative attribution scores were significantly correlated with age. Overall, the children offered more positive than negative attributions, and older children offered fewer negative attributions for all stimuli. This may be a reflection of their growing sensitivity to issues of race.

Racial awareness, which was not related to preschool curriculum, was negatively correlated with bias score, suggesting that children who are more racially aware are less biased toward people of other races. Knowledge of similarities and differences between racial groups, which was related to preschool curriculum, was not related to bias scores, suggesting that these two domain specific measures are tapping different types of knowledge.

Finally, this study sought to examine the relation between children's attitudes and those of their parents as assessed by the I. Katz and Hass (1988) racial attitude scale. With the exception of two seemingly spurious correlations, no relation was found. This suggests that children's attitudes toward the racial stimulus characters were not simply a reflection of their parent's attitudes. This is consistent with Aboud and Doyle's (1996) findings that neither positive nor negative attitudes of mothers had any observable impact on the children's attitudes. However, these results must be considered cautiously because so few of the parents contributed data.

In conclusion, the results of this study support the notion that multicultural preschool education increases children's domain-specific knowledge of some aspects of race. An initial step toward the reduction of negative attitudes toward other racial groups is the ability not to view all members of those groups as homogeneous and to view own group and other

groups as similar. The participants here clearly demonstrated this ability at an earlier age than relevant theory and research would predict. Also of note is that children exposed to multicultural curricula tend to view people in general in more positive than negative ways.

Bigler and Liben (1993) found support for the idea that both social learning and cognitive development play a role in how attitudes are formed and suggest that both should be considered when designing interventions. They further stated that prejudice is fostered through a belief that individuals of another group are homogeneous and that working at changing that belief can be effective in reducing prejudice. In addition, Ramsey (1991) suggests that efforts to challenge negative attitudes and promote positive attitudes toward other racial groups should start at the preschool age. Because teachers are important socialization agents, they and the curriculum they offer may play a role in the formation of positive attitudes in children even at the preschool level.

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