

Attitudes about Gender and Race

They affect children's well-being; they are different in single-sex classrooms

Rachel Harjes

In this study, reports by children, parents, and teachers assessed attitudes about race and gender, and how attitudes correlated with academic and psychosocial outcomes among European American and African American children in grades 4 and 5. The study also compared the attitudes and outcomes of students in single-gender classrooms with those of students in mixed-gender classrooms. Attitudes correlated strongly with multiple psychosocial outcomes (self-worth, depression, and life difficulties) but did not correlate with conduct or with academic outcomes. Overall, students in single-gender classes reported more positive psychosocial outcomes, suggesting that there are significant non-academic advantages of single-gender education. Overall, students in single-gender reported more adaptive attitudes about race but less adaptive attitudes about gender. Among boys, those in single-gender reported more positive attitudes about race and greater satisfaction with school. Among girls, those in single-gender reported less adaptive attitudes about both race and gender.

Single-gender education can provide many academic benefits including improved grades and test scores, more positive attitudes about school, and increased participation in non-traditional courses and careers, according to numerous studies (Riordan, 2002; Sax, 2007a; 2007b). In addition to analyzing academic outcomes, this study tested the hypothesis that students in single-gender classrooms would report more positive psychosocial outcomes (higher self-worth, fewer depression symptoms, fewer conduct problems, and lower levels of life difficulties), and that their outcome levels would correlate with more adaptive attitudes about gender.

Students in single-gender schools have been reported to have lower levels of gender stereotypes than students in mixed-gender schools. In a study of single-gender private Catholic schools, Lee and Bryk (1986) found that students in single-gender schools had more nontraditional gender role beliefs (were more approving of women working). A British study (Kessels & Hannover, 2008) found that girls in single-gender schools reported lower levels of accessibility of gender self-knowledge (indicating less salience and concern with gender) than girls in coed schools.

This study's focus on single-gender education was part of a larger study that assessed variables from three theories previously proposed to explain gender differences in depression and conduct problems. These included personality traits, coping responses, and sources of self-worth (values). The study also examined whether race and gender differences in these and other psychosocial outcomes could be partially explained by race and gender stereotypes and other measures of socialization. Socialization is the process by which children learn what society expects of them as members of their gender and race. One study of a biracial child sample (Dubois, Burk-Braxton, Swenson, Tevendale, & Hardesty, 2002) found that race and gender identity, as well as perceptions of race and gender discrimination, varied by race/gender group. These variables correlated with depression symptoms, with correlation patterns varying by race/gender group.

A stereotype is a set of beliefs about the characteristics of the members of a group. These beliefs are often exaggerated, negative, and resistant to revision (VandenBos, 2007). Stereotypes are detrimental because they nearly always imply that groups should be valued differently (e.g., "Men are more rational than women [and by *implication* they are better than women]" Ashmore, Del Boca, & Bilder, 1995, p. 757). This results in a perceived difference in status, which then extends to other judgments about members of the groups (Helgeson, 2009).

Stereotypes develop naturally, with children preferring members of their own gender as early as age 3 (Powlisha, 1995). Children acquire some degree of racial group preference by the age of 5 to 7, independent of the influence of parents or peers, based on children's perceptions of which group is doing better (Aboud, 1988).

Gender stereotypes are important because they have been linked to conduct problems in boys and to depression and anxiety in girls, including the higher rates of depression in European American females, beginning at puberty (Silvern & Katz, 1986). The perception of racial stereotypes has been shown to predict conduct problems in African American youths (Brody, Chen, Murry, Ge, Simons, Gibbons, et al., 2006). Reyna (2000) has theorized that stereotypes are harmful in the academic arena because they imply that success and failure are due to variables such as gender and race, which the child cannot control. Gender- and race-related expectations are especially salient in middle childhood (approximately ages 8 to 11), when children construct their templates of self-worth and achievement motivation that serve as designs for life (Eccles, 1999; Harter, 1999).

Depression symptoms and conduct problems were selected for emphasis in this study because as measured in children, they have been shown to predict levels of depression, suicide, criminality, and social dysfunction in adults (Fombonne, Wostear, Cooper, Harrington, & Rutter, 2001a; 2001b).

This study extends the attitude research of Dubois et al. (2002) by collecting data from children, parents, and teachers; by including academics and conduct as additional outcomes; and by assessing additional measures of group identity and stereotypes as correlates. This extension allowed the verification of the importance of attitudes about race and gender. The study extends previous single-gender research by assessing both academic and non-academic outcomes, by assessing a broad range of stereotype measures, by accounting for non-classroom variables previously found to "explain" single-gender advantages, and by analyzing all results by race and gender in a biracial sample.

Methodology

Hypotheses

This study was designed to test two hypotheses in a biracial child sample:

1. More positive and flexible attitudes about race and gender would correlate with more adaptive psychosocial outcomes (higher global self-worth, fewer depression symptoms, fewer conduct problems, and fewer reports of life difficulties).
2. Compared to students in mixed-gender classes, students in single-gender classes would have more positive and flexible attitudes about gender, and these attitudes would correlate with more adaptive outcomes for these students.

Statistical Design

The researcher administered the surveys in a classroom setting. Both parental consent and child assent were required for participation. In this study, statistical analyses included bivariate correlations to determine how strongly depression symptoms and conduct problems linked to measures of ethnic attitudes (own-group and other-group), ethnic and gender identity, and stereotypes about race and gender. Comparisons for single-gender vs. mixed-gender classes were performed at three levels: overall, gender and race. At each level, one-way analyses of variance (ANOVA's) were used to test whether students in the two types of classes differed significantly on outcomes and their correlates.

Participants

The students in this study were in grades 4 and 5 during the 2007-2008 school year. They were 9.56 to 12.14 years old at the time of testing, with an average age of 11.01 years. The students attended three suburban neighborhood public schools in a South Carolina school district where 60% of students were African Americans, 32% were European Americans, 4% were Hispanic, and 4% were other ethnicities (South Carolina Department of Education, 2008). In this sample, socioeconomic status (SES) as estimated by parental education did not differ significantly by race or class type. Overall, 58% of the parents reported having at least a 4-year degree and 74% of parents reported being married, with an additional 3% reporting living with a partner.

Of the 212 children who volunteered to participate in the study, 145 completed all 10 self-report child surveys and reported being either European American or African American, with no other ethnicity. Data from these students were used for testing the correlations of socialization constructs to outcomes. Children who reported multiple ethnicities and children who were non-African American minorities were excluded from these analyses because the groups were small in number and previous research data were not available for these groups. Class type comparisons used data from 84 students (within the 145) who were offered the choice of single-gender or mixed-gender classes for the 2007-2008 school year.

Instruments and Scoring

The instruments used in this study assessed multiple psychosocial outcomes and their correlates, as shown in Table 1. Depression symptom items related to children's reports of feeling sad, unworthy, or unloved. Conduct problem items assessed behaviors including attention-seeking, fighting, disobedience, and disturbing others. The "difficulty" scales of the SDQ (Goodman, 1999) have been shown to correlate with the probability that a child, if examined by a professional, would receive a clinical diagnosis of depression, conduct disorder, or hyperactivity (Goodman, 1999). This study design included both the parent (SDQ-P) and child (SDQ-C) versions of this measure.

Global self-worth, a measure of a child's overall self-acceptance and self-evaluation, was assessed by items such as "Some kids are happy with themselves as a person." Academic and social skill scales included items for learning problems ("Poor work habits," "Difficulty following directions"), frustration tolerance ("Accepts things not going his/her way"), and task orientation ("Completes work," "Well organized").

Attitudes about school were assessed by items on disliking school, boredom with school, and school being unimportant. Sources of self-worth represent children's values, as the importance they place on various domains (e.g., appearance, academics, behavior, and religion). These values have been shown to influence choices of activities and goals to pursue (Crocker & Wolfe, 2001).

Stereotypes about race and gender were assessed by the First Impression Scale (FIS), which was developed by the researcher for this study. The survey asked children to report whether "most people" would be likely to ascribe an item description to a child of each race/gender group (European American female, African American female, European American male, and African American male) as represented by an Avatar (computer generated graphic). The "most people" wording is intended to ascertain "stereotype knowledge," the child's perceptions of society's opinions. These perceptions have been shown to influence behavior even when the opinions are not endorsed by the child as either self-descriptive or prescriptive—describing what traits members of a group "ought" to have (Powlishta, Serbin, Doyle, & White, 1994).

The FIS measures stereotypes at four levels, as defined by Ashmore, Del Boca, & Bilder, (1995): traits, occupations, interpersonal dominance/control (e.g., who will make family decisions), and political/societal power (measured here as "status occupations" such as United States President). FIS scores indicate the degree to which children "endorse" a gender-typical stereotype.

The FIS has four trait scales: positive male traits (e.g., "adventurous," "independent"), positive female traits ("helpful," "obedient"), negative male traits ("aggressive," "brags"), and negative female traits ("dependent," "emotional"). The traits and occupations were among those found to be gender-typical in previous child research (Liben & Bigler, 2002). The ones selected for use have been shown to predict success in academics, careers, and relationships.

Scoring also calculated the "net positives" ascribed to each race, gender, and race/gender group. This was calculated as the percentage of positive traits (including both male- and female-typical traits) ascribed to a group, minus the percentage of negative traits (including both male- and female-typical traits) ascribed to the group. In this study, as in previous research (Powlishta et al., 1994), girls were ascribed more net positives than boys. Children ascribed positive traits to females 77% of the time, and negative traits to females 43% of the time, for a females' net positives score of 34%. Children ascribed positive traits to males 71% of the time, and negative traits to males 45% of the time, for a males' net positives score of 26%.

FIS scoring also generated several comparison scales, such as whether a child ascribes more net positive traits to his/her own gender and race groups, compared to other gender and race groups. This is a measure of the

child's perception of whether "other people" think positively of his/her group, compared to other groups. The girls in this study reported net positives of 34% to females (own gender) and net positives of 20% to males (other gender), for an in-group gender bias of 14%. Boys reported net positives of 31% to males (own gender) and net positives of 33% to females (other gender), for an in-group gender bias of -2% (which could also be stated as an out-group gender bias of 2%). Simply put, both boys and girls believe that most people favor girls.

Table 1: Measures of Psychosocial Outcome Variables and Their Correlate Variables

Variable	Measure	Informant*
<i>Psychosocial Outcomes</i>		
Depression symptoms	Children's Depression Inventory-S (Kovacs, 2003)	C
Depression symptoms (emotions scale)	Strengths and Difficulties Questionnaire, (SDQ; Goodman, 1999)	C and P
Conduct problems		
Any life difficulty		
Difficulties' impact on life overall		
Difficulties' impact on learning		
Conduct problems (acting out scale)	Teacher Child Rating Scale (Hightower, 1986)	T
Global self-worth	Harter Self-Perception Profile for Children (Harter, 1985)	C
<i>Socialization Correlates</i>		
Stereotype knowledge and in-group bias	First Impressions Scale (FIS)	C
Ethnic identity	Multigroup Ethnic Identity Measure (Phinney, 1992)	C
Ethnic belonging		
Liking, enjoying other ethnic groups		
Gender identity perception	Gender and Achievement Research Program (GARP; Maryland Adolescent Development in Context Study; MADICS, 2008)	C
Sources of self-worth (values)	Harter Self-Perception Profile for Children (Harter, 1985)	C
<i>Cognitive, Affective, Academic, Social</i>		
Coping with stress by aggression	Children's Response Style Questionnaire (Meiser-Stedman et al., 2007)	C
Aggressive personality	Multidimensional Personality Questionnaire – Parent Version (Lilienfeld, 2008).	P
Self-control		
Learning problems	Teacher Child Rating Scale (Hightower, 1986)	T
Task orientation skills		
Frustration tolerance skills		
School disengagement	Gender and Achievement Research Program (GARP; Maryland Adolescent Development in Context Study; MADICS, 2008)	C
Parental interest in child's activities		

*Note. Informant is child (C), parent (P), or teacher (T)

Much of this difference was accounted for by behavioral descriptions. Children in this sample ascribed the positive female-typical trait of "obedient" 32% more often to girls (87% - 55%), while they ascribed the negative male-typical trait of "misbehaves" 47% more often to boys (63% - 16%).

In addition to these gender differences, a similar gap was reported in racial biases. European American children ascribed net positives of 37% to their own race and net positives of 27% to the other race, for an in-group racial bias of 10%. African American children ascribed net positives of 25% to their own race and 31% to the other race, for an out-group racial bias of 6%.

In this study these group biases, along with several other measures of stereotypes about race and gender, were shown to correlate with maladaptive outcomes (lower self-worth, higher depression symptoms, and higher conduct scores) both at the overall sample level and by race/gender group.

On the FIS, “gender flexibility” (seeing the genders as similar) was calculated as the percentage of traits that are ascribed to both genders within a race (e.g. both European American males and European American females). “Race flexibility” (seeing the races as similar) was calculated as the percentage of traits that were ascribed to both races within a gender (e.g., both African American males and European American males). In this study, gender flexibility averaged 59% and race flexibility averaged 78%, indicating that children see the races as more similar than the genders. Flexibility is a positive, adaptive construct that represents the opposite of the endorsement of a stereotype.

Except for the newly developed FIS, all measures used in this study were previously validated with children aged 10 to 12. A pilot test was run with 11 students in grades 4 and 5, resulting in the addition of definitions and other explanations on several survey items (all original wording was retained). All of the FIS scales met the recommended standard for reliability of scales with fewer than 10 items (Cronbach’s coefficient alpha [α] of .5 or higher, or a mean inter-item correlation of between .2 and .4; Pallant, 2005). Contrary to previous research (Liben & Bigler, 2002), on the positive masculine traits scale, four items (“smart,” “logical,” “leader,” and “independent”) were ascribed more often to girls than to boys in this study.

Report card grades and standardized test scores for the 2006-2007 and 2007-2008 school years were provided by school administrators. These included test scores at both the state level (Palmetto Achievement Tests, PACT) and the national level (Measure of Academic Progress, MAP).

Data Analysis and Reporting

This sample contained unequal numbers of subjects by race/gender group. Of the 145 children in the broader study, there were 60 African American girls, 44 African American boys, 26 European American girls, and 15 European American boys. If these numbers were not adjusted, results would be heavily skewed to the scores of girls and African Americans. The race/gender groups also varied in the percentages participating in single-gender classes: European American girls, 67%; African American girls, 55%, European American boys 50%, and African American boys, 19%. Again, adjustment was needed so that the conduct problem scores for boys in mixed-gender would not be inflated by the larger number of African American boys, who reported higher conduct scores. To correct for this sampling imbalance, an SPSS (Statistical Package for the Social Sciences) statistical technique called sample weighting was used to simulate a balanced sample. The simulated sample was made the same size as the original sample in order to prevent over- or under-stating the significances of statistical tests (Hardy & Bryman, 2004).

Statistics reported here include measures of correlation (called the Pearson’s r) between variables, and the likelihood that groups differ significantly. Correlations and differences are customarily considered statistically “significant” if the statistical probability that the results occurred by chance (shown as p for probability) is less than .05 (5%). Because several aspects of this study involve previously unpublished assessments (e.g. extending to children and to African Americans), selected results are also reported that meet the less conservative or “marginal” standard of $p < .1$ (10% probability that results occurred by chance). These marginal results are intended to guide future researchers, as correlations and differences that only approached significance in this sample might reach significance in a slightly different population. If the degree of significance is not specifically stated below, it is less than .05.

Results

Results from the Larger Study

Descriptive statistics were compared to norms for two primary outcomes in order to confirm that this sample is similar to other community (non-clinical) samples. The mean level of depression symptoms, as measured in this sample by the CDI-S, was 2.36 ($SD = 3.31$), compared to a norm of 3.00 for both males and females, age 7 to 12 (Kovacs, 2003). This sample’s total difficulty score on the child version of the SDQ ($M = 13.65$, $SD = 5.37$) was similar to levels found (reported by gender, but not overall) by Truman, Robinson,

Evans, Smith, Cunningham, Millward, and Missis (2003) in their community sample (males $M = 14.81$, $SD = 4.34$, females $M = 17.31$, $SD = 6.06$).

The primary findings of the larger study (Harjes, 2009a), based on data from 145 students, are:

1. Attitudes about gender and race showed many correlations with psychosocial outcomes (self-worth, depression, and impact of life's difficulties) but few correlations with conduct or academic outcomes.
2. Attitudes about race linked more strongly to psychosocial outcomes than did attitudes about gender, as shown in Table 2. For example, net positive traits attributed to members of the "other race" correlated more strongly with adaptive outcomes (lower depression and lower difficulties' impact on life) than did attributions of traits to one's own race. Net positive traits attributed to African Americans correlated with adaptive outcomes (higher self-worth, lower depression, and lower difficulties' impact on life), but attributions to European Americans did not. Race flexibility (seeing the races as similar) correlated with adaptive outcomes, but gender flexibility did not. Liking members of the "other race" correlated with adaptive outcomes, but enjoying being with members of one's own race did not.

Table 2: *Correlations of Socialization Constructs to Outcomes*

Variable ¹	Outcome ^{2,3}		
	Global Self-Worth	Depression Symptoms	SDQ-C Life Impact
<i>Net positives to own gender</i>		▼.15+	
<i>Net positives to other gender</i>		▼.18*	
Net positives to own race	<i>ns</i>	<i>ns</i>	<i>ns</i>
<i>Net positives to other race</i>		▼.26**	▼.29**
Bias to own race		▲.15+	▲.33***
Net positives to European Americans	<i>ns</i>	<i>ns</i>	<i>ns</i>
<i>Net positives to African Americans</i>	▲.15+	▼.22*	▼.22*
Gender flexibility, traits	<i>ns</i>	<i>ns</i>	<i>ns</i>
<i>Race flexibility, traits</i>	▲.19*	▼.23**	▼.33***
<i>Race flexibility, male occupations</i>	▲.23**	▼.19*	▼.20*
<i>Race flexibility, status occupations</i>		▼.16+	▼.16+
<i>Like, mix with members of other ethnic groups</i>	▲.15+		▼.24**

Note. ¹ *Italics* indicate constructs on which higher scores correlate with more adaptive outcomes. ² The ▲ symbol indicates an increase in outcome scores; the ▼ symbol indicates a decrease in outcome scores. ³ The numeric values in the outcome columns are the Pearson's r value representing the degree of correlation between a variable and an outcome; *ns* indicates that the correlation did not reach or approach significance.

+ $p < .1$. * $p < .05$. ** $p < .01$. *** $p < .001$.

3. The strength of the correlations with outcomes varied at the race/gender level. African American boys had the largest number of correlations between outcomes and socialization constructs, suggesting a greater sensitivity to stereotypes in this group. Interestingly, a strong sense of belonging to one's ethnic group correlated marginally with higher depression scores for European Americans of both genders, but correlated significantly with lower depression for African American boys. Dubois and his associates (2002) found a similar pattern for European American boys but not for European American girls. Those authors theorized that for European American boys, a strong sense of racial identity and belonging may lead to guilt associated with their privileged status.
4. Although outcomes and correlations showed some clear distinctions by gender (girls reported more depression symptoms) and race (African Americans reported valuing religion more highly as a source of self-worth), most differences were by race/gender group. The experience of being a European American boy, across a broad range of descriptors, is markedly different from the experience of being an African American boy or a European American girl (cases in which either race or gender is shared).

5. Academic outcomes were strongly correlated with conduct problems (as reported by children, parents, and teachers). Both academic outcomes and conduct problems were strongly correlated with parent- and teacher-reported variables including the child's learning problems, self-control, task orientation, and frustration tolerance.

Summary of Results Related to Comparisons of Students in Single-Gender

The primary findings of the comparisons of students, parents, and teachers involved in single-gender classes to those in mixed-gender include the following:

1. Overall, students in single-gender classes reported equivalent or more adaptive psychosocial outcomes, including lower reporting of any life difficulty and the impact of life's difficulties on learning. These scores are shown in the Figure (next page).
2. Overall, students in single-gender reported more adaptive attitudes about race, including higher scores on ethnic identity and belonging, and on liking members of other ethnic groups. On the FIS stereotype measure they scored higher (more adaptive) on one measure of race flexibility (seeing the races as similar) but lower (less adaptive) on three scales of gender flexibility (seeing the genders as similar).
3. At the overall level, conduct problem reports varied by informant (child, parent, or teacher). As shown in the Figure, parents of students in single-gender reported their children had significantly higher conduct problem scores. Consistent with that evaluation, parents also reported strongly significantly ($p < .01$) higher levels of child aggression, a relatively stable personality construct that predicts conduct problems (Krueger, Caspi, & Moffitt, 2000). However, students reported the conduct problem score difference in the opposite direction, as marginally lower conduct problems in single-gender. Consistent with that evaluation, among correlates of conduct these students reported they were significantly less likely to respond to stress with aggression as a coping strategy, and that they placed marginally more value on behavior as a source of self-worth (they were more likely to choose as self-descriptive, "Some kids think it *is* important to behave the way they should"). By teachers' reports, at the overall level conduct did not vary significantly by class type. These conduct report differences at the overall level were due primarily to a similar pattern of differences among boys, as discussed below.
4. At the overall level academically, students in single-gender and those in mixed-gender were similar in report card grades as well as state and national tests at both the beginning and end of the year assessments, except for a single-gender advantage on all standardized math scores.
5. Among the girls in the study, those in single-gender classes reported one psychosocial advantage (lower scores on any life difficulty), but less adaptive attitudes about both race and gender on most measures. Girls in single-gender also reported marginally lower (more adaptive) scores on gender identity perception (believing one appears, feels, and acts like others of the same gender). Lower scores suggest a greater openness to androgyny (displaying traits typical of both genders). Academic differences for girls were mixed. At the race/gender level, among African American girls those in single-gender scored higher on three sections (ELA, math, and science) of standardized state tests.
6. Among boys, those in single-gender reported more adaptive attitudes about race, including higher ethnic identity and belonging, and liking of members of other ethnic groups. Differences in FIS stereotype measures were mixed, with most differences reflecting higher race flexibility and lower gender flexibility among boys in single-gender. Boys' conduct scores were similar to those reported at the overall level, with slightly different informant patterns. Parents reported marginally higher conduct problems in single-gender boys. However, by child and teacher reports, boys in single-gender and mixed-gender classes did not differ significantly on conduct. Boys in single-gender also reported more positive attitudes about school (were more likely to agree with statements like "Grades are very important to you" and "You like school a lot" on the GARP).
7. Analyzing by race, among European Americans those in single-gender classes reported more adaptive scores on reports of life difficulties, including both scales of impact. Similar to the pattern for boys overall, European American students in single-gender reported lower conduct scores and their parents reported higher conduct scores for them, while teachers reported that single-gender and mixed-gender

conduct scores did not differ for European Americans. Parents also reported that European Americans in single-gender had significantly ($p < .01$) more aggressive personalities. European Americans in single-gender had smaller year-to-year gains on both standardized math tests. However, they reported more positive attitudes about school. They also reported more adaptive attitudes about race on several measures. They reported lower gender flexibility on one measure of gender stereotypes (ascribing interpersonal control more to males), but were similar on the other 10 gender stereotype scales.

8. African Americans in single-gender reported no psychosocial differences, and academic differences were mixed. They also reported lower race flexibility and lower gender flexibility on most measures.
9. Parental education (used as an estimate of SES) did not vary by race or class type. Parental involvement as measured by number of calls initiated by the parent to the teacher did not vary by class type. Parents who chose single-gender reported they expected “enhanced learning” and wanted their child to be free from distractions of the opposite sex. Parents who chose mixed-gender said they wanted their child to be in “a more diverse social environment” or “with their friends.”
10. Teachers’ experience and training did not vary significantly by class type. Teachers, especially those teaching single-gender, reported they would prefer single-gender more strongly for their daughters than for their sons.

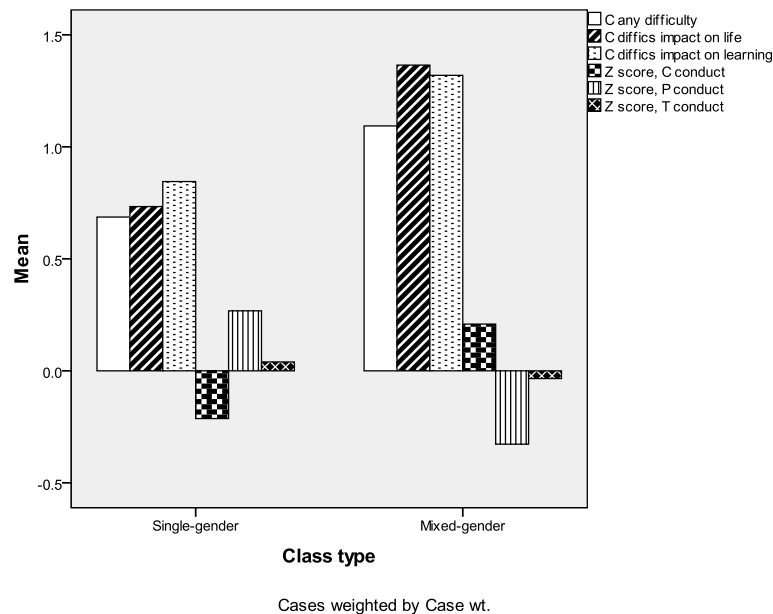


Figure: SDQ difficulty scores and conduct scores, single-gender vs. mixed-gender. Conduct scores were converted to standardized (Z) scores to facilitate comparisons of measures with different scoring scales. Differences approaching or reaching significance included the following, with an asterisk indicating the measures on which children in single-gender reported more adaptive scores:

- *Child report, any life difficulty, single-gender < mixed-gender, $p < .05$
- *Child report, difficulties’ impact on learning, single-gender < mixed-gender, $p < .1$
- *Child report, conduct problems, single-gender < mixed-gender, $p < .1$
- Parent report, conduct problems, single-gender > mixed-gender, $p < .05$

Discussion

This study verified that measures of attitudes about gender and race correlated with children’s self-worth, depression symptoms, and reports of life’s difficulties. Results also showed that students in single-gender classes reported more adaptive psychosocial outcomes, and better academic outcomes on most measures. However, the outcome differences were not related to differences in attitudes about gender as expected. They were correlated with more positive attitudes about race (including race flexibility about traits) among students in single-gender classes. In fact, students in single-gender reported lower (less adaptive) levels of gender flexibility on most measures. These differences did not translate to poorer outcomes because the attitudes about gender were not as strongly correlated with outcomes as were attitudes about race.

As described above, these psychosocial benefits for single-gender students varied by gender and race. Among single-gender students, psychosocial outcomes were better at the overall level and by group for boys, girls, and European Americans. Attitudes about school did not differ overall but were better by group for boys and European Americans. Attitudes about race were better at the overall level and by group for boys and European Americans. However, gender flexibility was lower (less adaptive) overall and by group for girls and African Americans. Also, attitudes about race were less adaptive by group for girls.

As noted above, earlier research showed that students in single-gender schools had lower levels of gender stereotypes than students in mixed-gender schools. However, similar empirical research has not been previously published for single-gender classes (implemented within a multi-gender school) in the US.

Students' self-selection may have contributed to these results, as participation in single-gender classes is a choice by parents and children in South Carolina. Specifically, two subgroups were found to be over-represented in single-gender classes:

- Boys whose parents rated them as temperamentally predisposed to conduct problems; several parents of boys, in response to the question of why they chose single-gender, answered in effect, "To see if it would help"
- Children who (by multiple measures) had a strong preference for members of their own gender; for example, every African American girl in single-gender classes responded "Very important" to the following item: "How important is it to you that you NOT DO (AVOID DOING) things that make you look and act like a member of the OTHER GENDER?"

The patterns in this data raise several interesting questions, including the following:

- Why did the boys in single-gender in this study report more positive attitudes about race? Was it because teachers teaching single-gender are trained to focus specifically on building community? Is that effort easier because the boys are not distracted by competing for girls' attention?
- Why did the parents of boys in single-gender classes in this study rate their children as more temperamentally aggressive and as having higher conduct problem scores, although boys and teachers reported scores that did not differ significantly by class type? Do these parents have higher standards for behavior that might have influenced them to consider single-gender? Is something happening in single-gender classrooms that tempers boys' aggressiveness? Is behavior being made more important in single-gender classes?

A possible insight on informant differences in conduct reports comes from Nicole Whitley, who has taught mixed-gender classes and single-gender girls classes at Killian Elementary, a predominantly African American school in Columbia S.C. She said she thinks single-gender teachers have more training about boys' "natural" behavior and don't see it as a problem. She said that when she observes the class of fourth-grade boys taught by Alexis Carwise, she senses the room as boisterous, with a lot of noise and activity. But it is "controlled aggression," she thinks, which the teacher and the child accept. Meanwhile, the parent may retain the traditional standard about the need to be quiet and still, and think the son has conduct problems. It is noteworthy that these "noisy" boys recently excelled on two sections of the Palmetto Assessment of State Standards (PASS). They had the highest percentage passing for science (84.6% meeting standard, compared to a grade average of 61.4%) and social studies (92.3% meeting standard, compared to a grade average of 80.7%). Their scores were similar to grade averages on the other PASS sections.

Contributions and Implications of This Study

This study has examined many beliefs and attitudes not previously examined in single-gender settings, including multiple measures of group identity and group stereotypes. The multiple levels of analysis used in this study have attempted to answer the question "From a psychosocial standpoint, who does single-gender education help, and how?" Results suggest that there are significant non-academic advantages of single-gender education, and that the advantages vary by race, gender, and race/gender group.

The study included several child, teacher, and parent variables that previous research has shown to correlate with single-gender academic advantages. These include a) better students selecting single-gender, b) more experienced teachers teaching single-gender, c) more involved parents choosing single-gender, and d) single-gender parents having higher SES. In this study, students in single-gender classes and those in mixed-gender classes were very similar on all these variables.

The results of the broader study show that beliefs about race and gender have significant links to important childhood outcomes. By including other theories proposed to explain gender differences, the larger study has shown that these socialization variables add a significant degree of explanation that is distinct from those other variables.

The study has extended previously published research on stereotypes in children by adding two categories of stereotypes (interpersonal control/deference and political/economic status) and by measuring stereotypes about both race and gender in a biracial sample of children. It confirmed earlier studies that the assignment of more desirable personal traits to a group correlated with the assignment of higher-paying occupations, superior interpersonal social roles and status, and the likelihood of becoming political or social leaders (Ashmore et al., 1995). By measuring stereotype “knowledge” or awareness, it focused on the child’s perceptions of what “other people” think of his/her groups, which relates closely to the way the child expects others to value and treat him or her, and to “explain” why the child did (or will) succeed or fail (Reyna, 2000).

This study has shown that high levels of stereotypes about race and gender are linked to maladaptive psychosocial outcomes. The results also suggest that in single-gender classes it is especially difficult to avoid gender stereotypes and their implications for differences in abilities, occupations, and attaining political status. It is hoped that the findings from this study can contribute to dialogues about race and gender issues and to the design of interventions to reduce the harmful effects of stereotypes.

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