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Differences in Gender and Ethnicity as Measured by Ratings of Three Writing Tasks

ABSTRACT The issue of racial/ethnic and gender differences in intelligence and academic abilities is fiercely and frequently debated, yet the examination of these differences in creativity is less studied. Our goal in this study was to use the Consensual Assessment Technique, in which experts judge a product's creativity, to examine differences in creativity among gender and ethnic groups. We conducted three separate analyses in which 13 experts rated 103 poems, 104 fictional stories, and 103 personal narratives written by Caucasian, African American, Latino/a, and Asian eighth-grade students. There were no significant African American-Caucasian differences on any of the writing tasks and there were no gender differences on all three tasks. The only significant differences in the creativity ratings on any of the tasks occurred in poetry, between the Latino/a-Caucasian groups and Latino/a-Asian groups. Implications and future directions are discussed.

INTRODUCTION The issue of racial/ethnic and gender differences in intelligence and academic abilities is fiercely and frequently debated (e.g., Gould, 1981; Herrnstein & Murray, 1994; Jacoby & Glauberman, 1995). Less studied is the question of racial and gender differences in creativity. Yet this gap is an important one, since it is often argued that creativity plays a crucial role in intelligence. Creativity is considered one of five components of Guilford's Structure of Intellect (1967) model; as an integral part of retrieval ability (also known as Glr), one of the eight abilities in the Cattell-Horn-Carroll theory (Carroll, 1993; Horn & Noll, 1997; McGrew & Flanagan, 1998); and one of three intelligences in Sternberg's triarchic theory (Sternberg, 1996;

Sternberg & Kaufman, 1998). Creativity and intelligence are often significantly (if moderately) correlated, although there is dispute about both the degree of such overlap or how it is to be interpreted (Barron & Harrington, 1981; Plucker & Renzulli, 1999; Runco, 1991, 1999; Simonton, 1988, 1994; Sternberg & Lubart, 1999).

Most tests of intelligence and academic achievement show significant differences in scores by ethnicity, with African American and Latino/a students receiving lower scores than Caucasian students (e.g., Camara & Schmidt, 1999; Loehlin, 1999). A review of differences between males and females on intelligence and achievement tests also indicate significant differences in performance. Some achievement tests show differences by gender, with males outperforming females (Coley, 2001). Similarly, literacy achievement tests show differences by gender, but with females outperforming their male counterparts (Donahue, Finnegan, Lutkus, Allen, & Campbell, 2001).

In particular, in the field of writing assessment, national surveys of writing achievement indicate that Caucasian students outperform their African American and Latino/a counterparts at elementary, middle and secondary school levels (Greenwald, Persky, Campbell, & Mazzeo, 1999). For example, data from the 1998 National Assessment of Educational Progress Writing Assessment found that 27 percent of the Caucasian fourth graders wrote at the proficient level. However, only eight percent of the African American students and 10 percent of the Latino/a students wrote at the proficient level. A similar pattern of differences was found for eighth graders and twelfth graders.

Differences in performance were also found when comparing the performance of males and females. Data from the 1998 NAEP Writing Assessment (Donahue, et al, 2001; Greenwald, Persky, Campbell, & Mazzeo, 1999) show that almost twice as many twelfth-grade girls (27 percent) reached the proficient level compared to twelfth-grade boys (14 percent), with similar differences among fourth- and eighth-grade students. Thus, national surveys of students' overall writing performance indicate significant differences between the key gender and race/ethnicity groups.

However, research on gender and race/ethnicity differences in creativity has yielded different results. Most studies that have examined gender differences and creativity have found no significant differences in the creative abilities of males and females,

regardless of culture and background (Baer, 1999, in press; Barron & Harrington, 1981; Saeki, Fan, & Van Dusen, 2001; Wang, Zhang, Lin, & Xu, 1998).

Studies that have examined race/ethnicity differences in creativity are less clear cut. Comparisons of African Americans and Caucasians on the Torrance Tests of Creative Thinking (TTCT; Torrance, 1974) showed no significant differences at the elementary school level (Glover, 1976b; Knox & Glover, 1978) and the college level (Glover, 1976a). Three of four TTCT Verbal forms showed Caucasians scoring significantly higher than Latino/as, but there were no significant differences on the Figural forms (Argulewicz & Kush, 1984). American college students scored higher on the TTCT than Japanese college students in one study (Saeki et. al., 2001), and Americans from five different age groups scored higher than similar individuals from Hong Kong (Jaquish & Ripple, 1984).

However, only a few studies have used measures beyond the TTCT or similar psychometric tests to examine differences in creativity between the gender or race/ethnicity groups. One such study employed biographical or self-report measures to assess creativity (Stricker, Rock, & Bennett; 2001). This study found no differences between the race/ethnicity groups when biographical measures of aesthetic expression were used, such as questions that tapped into creative abilities, such as artistic accomplishments. However, another study found that Malaysian students scored higher than American, Indian, and Hungarian students on one self-report measure of creativity, but American students scored higher than did Malaysian students on a different self-report measure (Palaniappan, 1996).

A third possible method for measuring creativity, the analysis of actual creative products, has been used to analyze differences by culture. Artwork produced by American college students was rated as more creative than art produced by Chinese students by both American and Chinese raters (Niu & Sternberg, 2001). A similar study, however, that compared American and Chinese drawings of geometric shapes found that the two groups were rated similarly for creativity by both American and Chinese raters (Chen, Kasof, Himsel, Greenberger, Dong, & Gui, 2002).

Although the analysis of creative products for differences by culture have provided useful insights, this method has not been used to analyze differences by gender and ethnicity. Yet a wide of range of psychologists and creativity scholars have focused on the creative product as a means of providing

insight into creativity (e.g., Amabile, 1996; Baer, 1993; Bruner, 1962; Jackson & Messick, 1965; Sternberg, Kaufman, & Pretz, 2002; Sternberg & Lubart, 1996). One way of judging a product's creativity, called the Consensual Assessment Technique (CAT), is to determine whether "appropriate observers independently agree it is creative" (Amabile, 1996, p. 33).

Although the CAT has been extensively used in research studies on creativity (see Amabile, 1982, 1996), most of these studies have not examined race/ethnicity differences. Some early CAT work with gender differences indicated that girls may be more creative on certain verbal tasks and boys may be more creative on certain artistic tasks (Amabile, 1996). In addition, a series of studies with middle school students showed a difference on one of two math-related creativity tasks (males scored higher) but no significant differences on any of several verbal and art tasks[1] (Baer, 1991, 1993, 1997, 1998a).

Our goal in this study was to use the CAT methodology to examine differences between gender and race/ethnicity groups in their performance on creative writing tasks. We conducted three separate analyses of poems, stories, and personal narratives collected as part of the 1998 National Assessment of Educational Progress (NAEP) Classroom Writing Study. All were written by eighth-grade students in response to assignments developed and administered by their regular classroom teachers.

METHOD

Selection of Sample.

The papers were all drawn from the 1998 NAEP Classroom Writing Study. In that study, eighth graders from 32 states were asked to assemble folders containing two samples of their best writing. The students chose which pieces were included from among the work they had completed for their regular classroom assignments. Seventeen percent of the students included poetry in their folders (416 total poems), 34 percent included fictional stories (840 total fictional stories), and 48 percent included personal narratives (1,195 total personal narratives). Approximately 125 classrooms, representing a wide variety of demographics, participated in this study. In some classrooms many students contributed samples based on the same assignment; in others, as many as 30 different assignments were represented in the students' folders.

[1] A significant difference has been found in the interaction between gender and motivational constraints, however. In a series of studies, middle school girls were much more susceptible to the negative impact of both anticipated evaluation (Baer, 1997, 1998a) and rewards (Baer, 1998a).

For the present study, a sub-sample of 102 poems, 103 fictional stories, and 103 personal narratives was selected for analysis. The papers selected represented a range of community types (rural, suburban, urban) and major geographic regions of the country (Northeast, Southeast, Central, and West). No more than one paper per student was included in the samples.

Three specific criteria were used to select student work: race/ethnicity; gender; and general writing ability. The goal was to select an approximately equal number of papers written by Caucasian, African American, and Latino/a eighth graders, for each of the three types of creative writing. Because there were fewer Asians in the sample (less than 5 percent), it was not possible to select an equal number of papers written by Asian students, so fewer papers from Asian students were included in each sample. Second, within each of the race/ethnicity groups, the goal was to select an equal number of papers from male and female students. The final distribution of papers, by type of creative writing, gender, and each of the four race/ethnicity groups is presented in Table 1. Overall, there were papers by 168 females and 142 males selected for analysis.

Finally, an effort was made to control for general writing ability. In the original study, highly trained classroom teachers scored each piece of writing using a four-level holistic rubric. This rubric classified students' work into one of four categories based on overall writing effectiveness. The rubric defined effectiveness as a combination of the qualities of clarity, grammatical correctness, and development of ideas or themes (Solomon, et al, in press). This rubric did not include any reference to creativity, imaginative thought or innovation. This holistic rubric is consistent with most large-scale assessments of students' overall writing ability.

TABLE 1. Gender and ethnicity of paper-writers by type of writing.

	African American		Caucasian		Latino/a		Asian		Total	
	M	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*
Poetry	12	18	9	20	15	16	4	9	40	63
Fiction	13	15	16	16	12	19	7	6	48	56
Narrative	13	17	17	12	16	14	8	6	54	49
Total	38	50	42	48	43	49	19	21	142	168

For each of the three types of creative writing, papers were selected so that the ability level distribution for males and females was approximately the same. Likewise, the distribution across the four holistic score levels was approximately the same for each of the four race/ethnicity groups. The goal was to ensure that the sample papers from the male students and the female students represented the same balance in general writing ability. Likewise, this balancing was an attempt to ensure that the sample papers from Caucasian, African American, Latino/a, and Asian students represented the same range of overall writing ability. In a separate report on validating the use of the Consensual Assessment Technique on creative products that have been collected in more naturalistic, non-experimental settings (resulting in products that vary widely in many ways, such as in the instructions given to subjects), Baer, Kaufman, and Gentile (in press) provide more detailed information on the methodology of this selection.

Procedure.

Thirteen expert judges participated in this study, representing three different types of expertise. The first type of expertise involved an in-depth familiarity with eighth-grade creative writing. Middle school teachers who emphasized the teaching of creative writing in their practice comprised this first group of experts. The second type of expertise represented were those most familiar with producing creative writing — published creative writers, who also had extensive experience working with middle school students either through giving workshops in the schools or through editing collections of creative writing by middle school students. The third type of expertise related to having a familiarity with research on creativity. Psychologists who study creativity made up this third type of experts. There was roughly equal representation in each of these types of expertise, and a few judges fell into two of the three categories. All thirteen judges read and assessed the creativity of all of the fictional stories, personal narratives, and poems using a six-point scale. As is consistent with the CAT framework, judges used their own personal opinion of what constituted a creative work; there were no pre-set standards or definitions.

Judges rated the poems, fictional stories, and personal narratives independently. To help them with the task, judges were encouraged first to divide the papers in each group into three piles (low, medium, and high creativity). Next, the experts were asked to read the poems, fictional stories, and person narratives a second time and to assign them a score from 1 to 6, with 1 being the lowest level of creativity and 6 representing

the highest level of creativity. In this second rating, they were free to move papers into whichever of the six levels they deemed most appropriate, regardless of their initial classifications. These 1-to-6 ratings were conducted and collected entirely through the mail. Raters did not meet or talk about their ratings with one another or with the experimenters until after all the judges' ratings had been submitted. Very high levels of inter-rater reliability (coefficient alphas of 0.94 for the stories, 0.96 for the personal narratives, and 0.87 for the poems) were found, and no significant differences based on judges' type of expertise were observed.

RESULTS

Mean differences can be seen for all ethnicities in Table 2. To determine whether these differences were large enough to be statistically significant, an Analysis of Variance (ANOVA) was

TABLE 2. Differences in ethnicity for all categories of writing.

Ethnicity	*N*	Mean	SD
Poetry			
African American	30	3.57	0.85
Caucasian	29	3.68	0.87
Latino/a	31	3.08	0.76
Asian	13	3.96	0.74
Stories			
African American	28	3.07	1.12
Caucasian	32	3.58	1.12
Latino/a	31	3.25	1.19
Asian	13	3.82	0.88
Narratives			
African American	30	3.09	1.04
Caucasian	29	3.54	1.15
Latino/a	30	2.74	0.96
Asian	14	3.52	1.53
Total			
African American	88	3.25	1.02
Caucasian	90	3.60	1.05
Latino/a	92	3.03	1.00
Asian	40	3.76	1.11

conducted with ethnicity as the independent variable and the mean creativity scores as the dependent variable. A significance level of $p < .01$ was selected.

For narratives, there was not a significant effect ($F(3, 99) = 2.97$, n.s), nor was there a significant effect ($F(3, 100) = 1.88$, n.s.) for stories. For poetry, however, there was a significant effect ($F(3, 99) = 4.59$, $p < .01$). Tukey's Honestly Significant Differences (HSD) test was conducted to compare the creativity scores, and the only significant difference was found between Asians and Latino/as ($p < .01$).

In addition, an ANOVA was conducted on all 308 creative writing pieces. There was a significant effect ($F(3, 306) = 7.12$, $p < .01$). Tukey's Honestly Significant Differences (HSD) test was conducted to compare the creativity scores, and significant differences were found between Asians and Latino/as and between Caucasians and Latino/as ($p < .01$).

A series of ANOVAs were conducted to test for gender differences using gender as the independent variable and the mean creativity scores as the dependent variable. All three ANOVAs for the different categories (narratives, poetry, and stories) were not significant. For narratives, $F(1, 101) = 1.20$, n.s. For poetry, $F(1, 101) = 1.22$, n.s. And for stories, $F(1, 102) = 0.85$, n.s. An ANOVA was also conducted on the total group, and was also not significant [$F(1, 308) = 0.76$, n.s.].

DISCUSSION

There were no differences across ethnicity in two of the three creative writing tasks, and no gender differences in any of the creative writing tasks. The only groups for which any significant differences were found were Latino/a-Caucasians and Latino/a-Asians. There are many possible reasons for these findings, such as the verbal nature of the creativity measure.

Latino/as have traditionally received lower scores on measures of Verbal ability than on measures of Nonverbal ability (Kaufman, 1994), and therefore the question of language could be a confounding variable.

Perhaps if a similar study were conducted for artwork, these differences would not be significant. Such a result would be consistent with Argulewicz and Kush's (1984) finding that although Latino/as scored lower than Caucasians on measures of verbal creativity, there were no differences in figural creativity. A domain-based difference of this kind would be in line with research that has shown creativity to be more domain-specific than general (Baer, 1991, 1993, 1998b; Kaufman & Baer, in press).

An explanation of this difference based on possibly lower initial levels of Verbal ability is somewhat undercut, however, by the fact that the papers were selected so that the papers in each group had received similar evaluations of general writing ability. Even the attempt at controlling for general writing ability may not have been enough; the way that people are creative in language domains differs as a function of whether they are bilingual or monolingual (Kachru, 1985). So comparing Latino/a students with comparable writing skills may still not be enough of a control for cognitive differences in language processing. Perhaps a future study can measure creativity across ethnicities and cultures by having participants produce a creative piece of writing in their native language.

An explanation of this difference based on possibly lower initial levels of Verbal ability is somewhat undercut, however, by the fact that the papers were selected so that the papers in each group had received similar evaluations of general writing ability. General writing ability having been made equal, it is somewhat hard to explain lower creativity scores based on such differences. This difference therefore remains a puzzle.

The fact that the samples were selected to ensure that general writing ability did not influence creativity ratings also raises concerns. Although there is reason to believe that creativity and technical goodness are different things and that they receive largely uncorrelated ratings by expert judges in both the Verbal and Art domains (Amabile, 1982, 1996), that is not to say that there is no connection at all. In fact, if we had believed there was no connection at all between general writing skill and creativity in writing, we would not have bothered to equalize our sample groups on this dimension. Part of the absence of differences among the various groups, therefore, may well be attributable to the method of selection employed to create the sample used in this study. Such a sampling technique necessarily limits variance.

What we believe this study does demonstrate, however, is that when differences in general writing skill (which clearly do exist among the groups represented in this study) are controlled, differences in creativity are largely non-existent. If creativity in writing and general writing competence were they same thing, such a claim would be meaningless, of course. To the extent that creativity in writing and general writing competence are different, however, this study demonstrates that the commonly observed group differences in writing are limited to general or technical writing skill, not creative writing skill.

Controlling for related but distinct skills is common in psychometric research. IQ is one variable that is correlated with many other variables of interest, and assembling groups such that they are similar in general intellectual performance using IQ test scores is a common practice. In creativity research there is agreement that creativity and intelligence are related but distinct concepts and that the skills underlying intelligence and creativity are to some degree different and to some degree overlapping, although the degree of the overlap is unclear (Amabile, 1996; Barron & Harrington, 1981; Plucker & Renzulli, 1999; Runco, 1991, 1999; Simonton, 1988, 1994; Sternberg & Lubart, 1999). It is therefore sometimes useful, when trying to understand creativity, either to form groups that hold intelligence constant or to separate statistically the variance associated with creativity but with not general intelligence.

We believe that the relationship between creativity in writing and general writing competence parallels that of general intelligence and creativity, although we cannot claim that there is not such a rich research literature to support the creativity in writing/general writing competence distinction as there is the creativity/intelligence distinction. The Consensual Assessment Technique has only recently opened the door to such research, however, and the beginnings of a research-based case for a domain skill/domain creativity distinction has been made (Amabile, 1982, 1996). This distinction is supported by the experience of writing instructors, who often teach creative writing, at least in part, as a course separate from other composition courses.

To the extent, then, that creativity in writing and general writing competence overlap, a finding of no difference in creativity between gender and racial/ethnic groups, when general writing competence has been held constant, is neither surprising nor interesting. But to the extent that creativity in writing and general writing competence *are* different, such a finding is quite significant. The lack of differences between African American and Caucasian students on all three types of writing tasks, the lack of gender differences on all three tasks, and the lack of any significant differences between the groups on the personal narratives and fictional stories are all noteworthy. It suggests several very important areas in which group differences may not exist. The fact that creativity in writing is an area that schools give far less attention than they do general writing competence makes sense if one believes that a significant cause of the racial/ethnic and gender differences

that have been observed are the result of different educational experiences.

We also find this result highly interesting in light of discussions of creativity assessment as a possible supplement to current methods of evaluating students' abilities (Kaufman & Boodoo, 2003; Kyllonen, Walters, & Kaufman, 2002). Current intellectual and academic assessments, for whatever reasons, often show significant gaps in the performance of students of different gender or ethnicity. The results of the current study seem to indicate that the addition of measures of creativity could provide new information about students' abilities and concomitantly reduce the observed gap in performance of the different gender and ethnicity groups. Further research in this area is needed to explore this issue and the feasibility of including creativity measures in educational assessments.

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