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The Gifted Rating Scales-Preschool/Kindergarten Form: An Analysis of the Standardization Sample Based on Age, Gender, and Race

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Abstract

This study reports on an analysis of the standardization sample of a rating scale designed to assist in identification of gifted students. The Gifted Rating Scales-Preschool/Kindergarten Form (GRS-P) is based on a multidimensional model of giftedness designed for preschool and kindergarten students. Results provide support for: the internal structure of the scale; no age differences across the 3-year age span 4:0–6:11; gender differences on only one of the five scales; artistic talent; and small but statistically significant race/ethnicity differences with Asian Americans rated, on average, 1.5 scale-score points higher than whites and Native Americans and 7 points higher than African American and Hispanic students. The present findings provide support for the GRS-P as a valid screening test for giftedness.

The No Child Left Behind Act (U.S. Department of Education, 2002) focuses attention and resources on our least educated and those students who are lagging behind academically. There is considerably less attention, however, directed to America's brightest and most able students and no equivalent legislation that protects the gifted (Borland, 1996; Gallagher, 2003; Pfeiffer, 2002). In our society today, many continue to believe that gifted students will do well academically and in life after graduation without any special attention or recognition (Borland; Sternberg, 1996).

There are a growing number of leaders in American society who recognize that the gifted have unique developmental and psycho-educational needs, and that educating our most talented young citizens is a high-priority issue (Pfeiffer, 2001; Seligman, 1998; Seligman & Csikszentmihalyi, 2000). This is particularly true for young gifted children (Bloom, 1985; Jackson, 2003). Early recognition and appropriate environmental support increase the probability of future extraordinary achievement, and reduce the risk of later emotional and educational problems (Harrison, 2004; Morelock & Feldman, 1992; Pfeiffer & Stocking, 2000).

Many public schools, however, remain ill equipped to meet the needs of young students with precocious intellectual and academic abilities and/or special talents. Too few educators are

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trained, or have the resources to identify or design effective programs that meet the psychosocial and educational needs of the young, gifted child (Jackson, 2003).

One important, first step in serving gifted preschool or kindergarten students is accurately and efficiently identifying them. A recent survey of gifted experts highlighted the identification process as the second most frequently cited issue facing the field. Forty-one percent of 64 international authorities in the gifted field agreed that identification of the gifted remains problematic (Pfeiffer, 2003). One of the problems is that the field of gifted education has too few technically sound screening instruments, especially tests, designed for the young, gifted child.

The IQ test is almost routinely used- irrespective of the particular cut off score that a school district or state adopts for inclusion -to determine whether a student qualifies for gifted placement. There are few screening tools available to complement the IQ test in providing a more comprehensive picture of a young student's abilities. A recently published article reviewed three of the more popular teacher rating scales designed to identify gifted students (Jarosewich, Pfeiffer, & Morris, 2002). The investigators selected the three most widely used and currently available instruments that employ the teacher as informant. The three scales reviewed were: (a) the Scales for Rating the Behavioral Characteristics of Superior Students (SRBCSS; Renzulli et al., 1997), (b) the Gifted and Talented Evaluation Scales (GATES; Gilliam, Carpenter, & Christensen, 1996), and (c) the Gifted Evaluation Scale, Second Edition (GES-2; McCarney & Anderson, 1989). All three scales were designed for use with young, gifted students; the GATES and GES-2 norms begin at age 5 and the SRBCSS norms start for students in kindergarten. The review concluded that all three scales had technical shortcomings that limited their diagnostic usefulness. Specific concerns included nonrepresentative standardization normative samples, low interrater reliability, and lack of evidence for diagnostic accuracy (Jarosewich et al., 2002).

Recognizing that hundreds of thousands of school-age children in the United States are referred annually for gifted consideration, and that the gifted field would benefit from a technically adequate screening tool to assist in the identification of young gifted students, we undertook to develop a new gifted screening instrument, the Gifted Rating Scales (GRS; Pfeiffer & Jarosewich, 2003). The scales include a Preschool/Kindergarten Form (GRS-P) for ages 4:0 to 6:11 and a School Form (GRS-S) for ages 6:0 to 13:11. Both forms yield raw score totals on all scales, which are converted to age-based T scores and associated cumulative percentages. This article focuses exclusively on the GRS-P.

The present study explored whether possible differences exist on each of the five GRS-P scales for gender, race, and age. The analyses described in this study have not been reported elsewhere and are intended to extend the information reported in the user manual. A similar analysis of the GRS-S standardization sample appears in *Gifted Child Quarterly* (Pfeiffer & Jarosewich, 2007).

METHOD

Participants

Data used in the present study were obtained from the GRS-P standardization sample. Each child's preschool or kindergarten teacher was invited to participate in the development of the national standardization sample by completing a rating form. Teacher and parent informed consent was obtained (Pfeiffer & Jarosewich, 2003, p. 24). The full standardization sample was used for the multivariate analysis of variance (MANOVA). This sample consisted of 188 boys (50%) and 187 girls (**50%**). The age group of the sample was stratified within five 6-month age bands: 4:00–4:5, 4:6–4:11, 5:0–5:5, 5:6–5:11, and **6:0–6:11**, with each age band comprising 20% of the standardization population.

During standardization sampling, the test publisher, The Psychological Corporation, intentionally stratified the GRS-P standardization sample to closely approximate important demographic characteristics of the U.S. population, such as race/ethnicity, parent education level, and regional representation (U.S. Bureau of Census, 2000). For example, the sample was 62.67% Caucasian, 16% African American, 16% Hispanic, and 2.67% Asian American. Tables 4.1–4.3 in the GRS test manual report data on race/ethnicity, parent education level, and regional representation of the GRS-P sample stratified within the five age bands (Pfeiffer & Jarosewich, 2003, p. 25).

Instrument

The GRS-P is designed for ages 4:0 to 6:11 and consists of five scales with 12 items each for a total of 60 items (Pfeiffer & Jarosewich, 2003). To facilitate compatibility, the GRS-P was co-linked during standardization with the standardization of the new Wechsler Preschool and Primary Scale of Intelligence, Third Edition (WPPSI-III). The items of the GRS-P represent skills and behaviors developmentally appropriate for preschool and kindergarten students, whereas the items of the GRS-S reflect more developmentally advanced skills or behaviors. The GRS-S includes a sixth scale, leadership, which is not included in the GRS-P. Both forms yield raw score totals on all scales, which are converted to age-based T scores and associated cumulative percentages.

The GRS-P is based on a multidimensional model of giftedness that incorporates the Munich Model of Giftedness and Talent (Zigler & Heller, 2000) and the typology that appears in the U.S. Department of Education Report, *National Excellence: A Case for Developing America's Talent* (Ross, 1993). Below is a brief description of each of the five GRS-P scales:

1. *Intellectual ability.* This scale measures the child's verbal and nonverbal mental skills and intellectual competence. Items on this scale rate the child's memory, reasoning ability, problem solving, and mental speed.
2. *Academic ability.* This scale measures the child's skill in dealing with factual and/or school-related material. Items rate readiness and advanced development/proficiency in reading, math, and other aspects of the early childhood curriculum.

3. *Creativity*. This scale measures the child's ability to think, act, and/or produce unique, novel, or innovative thoughts or products. Items rate the child's imaginative play, original thinking, and inventive approach to situations or problems.
4. *Artistic talent*. This scale measures the child's potential for, or evidence of ability in drama, music, dance, drawing, painting, sculpture, singing, playing a musical instrument, and/or acting.
5. *Motivation*. This scale refers to the child's drive, tendency to enjoy challenging tasks, and ability to work well without encouragement or reinforcement. The motivation scale is not viewed as a type of giftedness, but rather as the energy that impels a young child to achieve.

Each item is rated by the preschool or kindergarten teacher on a 9-point scale divided into three ranges: 1–3 = *below average*, 4–6 = *average*, and 7–9 = *above average*. The GRS-P manual provides a classification system that indicates not whether the child is gifted, but rather the *likelihood* that the young student is gifted, based on their T score. The higher the child's T score on one or more of the gifted scales, the higher the probability that the child is, in fact, gifted compared to her same-age preschool or kindergarten peers. The T scores were computed based on each age group and, thus, age adjusted so that the classificatory ranges may be applied across age bands. A T score below 55 (below 69%) indicates a low probability of giftedness, a score between 55 and 59 (69–83%) indicates a moderate probability of giftedness, a score between 60 and 69 (84–97%) indicates a high probability of giftedness, and a score above 70 (98+%) indicates a very high probability that the child is gifted.

Test development followed a carefully prescribed set of steps, including a review of existing rating scales: a survey of gifted experts and authorities in early childhood: focus groups consisting of school psychologists, gifted educators, and classroom teachers; and pilot and field testing. Standardization was co-linked with standardization of the new WPPSI-III (and WISC-IV in the case of the GRS-S). Final item selection was guided by factor structure, item mean scores, item bias (parent-education level, gender, and ethnicity), and interrater and test-retest reliability. For example, an original Creativity item, *displays an active imagination*, was eliminated from the final version because its mean score of 6.03 fell above the a priori acceptable range set at 5.0–5.9. The test manual reports evidence of high reliability and validity. Based on the standardization sample, coefficient alpha reliabilities ranged from 0.97 to 0.99 and standard error of measurements ranged from 1.0 to 1.73 across the five scales and five age ranges. Based on a sample of 124 preschool and kindergarten students ages 4:0–6:11 (average age 5.4 years) with a median retest interval of 18 days, test-retest reliability coefficients ranged from .84 on the Creativity scale for the age range 5:0–5:11 to .97 on the Intellectual Ability, Academic Ability, and Creativity scales for the age range 6:0–6:11. Based on a sample of 56 preschool and kindergarten students rated by two teachers, interrater consistency was .70 for Artistic Talent, .80 for Academic Ability, and .84 for Intellectual Ability. The test manual also provides evidence to support internal structure, and convergent and divergent validity (Pfeiffer & Jarosewich, 2003). More detailed information on the reliability, validity, and normative data of the GRS-P appears in a recent review by Margulies and Floyd (2004).

Procedure

The test publisher provided the authors with a data file that included data for the entire GRS-P standardization sample. Analysis used the full standardization sample data, and a separate MANOVA was conducted to test for differences on each of the 5 GRS-P scales with respect to gender, race, and age. Given the small sample sizes in some of the cells, a single MANOVA to test for the interactions among the three independent variables was not conducted (Newton & Rudestam, 1999). A Bonferroni correction was applied to control for the inflation of Type I error. This estimate was calculated to be $p < 0.016$ for the main effects.

RESULTS

Preliminary analyses indicated that multivariate normality and homogeneity of variance assumptions were met. For all significant findings, η^2 was calculated to determine effect size. An effect size of $\eta^2 = .01$ was defined as a small effect, $\eta^2 = .06$ was defined as a medium effect, and $\eta^2 = .14$ constituted a large effect (Sprinthall, 2000).

Analysis of Internal Structure

Correlations among the GRS-P scales are presented in Table 1. Intercorrelations are moderate to high, ranging from .70 between Intellectual Ability and Artistic Ability to .93 between Intellectual Ability and Academic Ability. Among the eight possible intercorrelations, one was above .90 (Intellectual Ability-Academic Ability, as mentioned above), three were in the .80–.89 range (Academic Ability-Creativity; Intellectual Ability-Creativity; Academic Ability-Motivation), and the majority of intercorrelations, four, were in the .70–.79 range (Artistic Talent-Motivation; Academic Ability-Artistic Talent; Artistic Talent-Creativity; and Intellectual Ability-Artistic Talent).

Analysis of GRS-P Standardization Sample by Gender

The MANOVA corresponding to gender yielded a significant result, $F(5, 329) = 3.22, p < .01$ (Wilks' Lambda = 0.95) with a small effect size of $\eta^2 = .05$. Descriptive statistics for each GRS-P scale for gender are presented in Table 2. Females obtained significantly higher scores on the Artistic Talent scale, $F(1, 333) = 8.23, p < .01, \eta^2 = .02$. The mean scores on the Artistic Talent scale were 52.67 for girls and 47.08 for boys, a 5.6 point difference in favor of females. There were no statistically significant differences by gender on the remaining four scales: Intellectual Ability, Academic Ability, Creativity, or Motivation.

Analysis of GRS-P Standardization Sample by Race/Ethnicity

The MANOVA comparing GRS-P scales based on race/ethnicity yielded a significant result at the $p < .01$ level, $F(20, 1,092) = 2.36, p = .001$ (Wilks' Lambda = 0.87), with a small effect size of $\eta^2 = .04$. Bonferroni post-hoc analyses indicated significant differences by race/ethnicity. On the Academic Ability scale, Asian Americans were rated higher than Hispanics, $F(4, 333) = 9.02, p < .05, \eta^2 = .10$, and Caucasians were rated higher than African Americans, $F(4, 333) = 9.02, p < .001, \eta^2 = .10$, and Hispanics, $F(4, 333) = 9.02, p < .001, \eta^2 = .10$. The Artistic Talent scale yielded significant differences between Caucasians and both Hispanics, $F(4, 333) = 5.41, p < .01, \eta^2 = .06$, and African Americans,

$F(4,333) = 5.41, p < .05, \eta^2 = .06$, in favor of Caucasians. The Creativity scale yielded differences with Caucasians rated significantly higher than Hispanics, $F(4,333) = 7.83, p < .001, \eta^2 = .09$, and African Americans, $F(4, 333) = 7.83, p < .001, \eta^2 = .09$. On the Intellectual Ability scale, Asian Americans were rated significantly higher than both Hispanics, $F(4, 333) = 7.31, p < .01, \eta^2 = .08$, and African Americans, $F(4, 333) = 7.31, p < .05, \eta^2 = .08$. Caucasians, similarly, were rated higher than Hispanics, $F(4, 333) = 7.31, p < .001, \eta^2 = .08$, and African Americans, $F(4,333) = 7.31, p < .001, \eta^2 = .08$. Caucasians were also rated higher than Hispanics, $F(4, 333) = 5.10, p < .05, \eta^2 = .06$, and African Americans, $F(4,333) = 5.10, p < .01, \eta^2 = .06$, on the Motivation scale.

Mean and standard deviation estimates for each GRS-P scale by race/ethnicity are presented in Table 3. Teachers rated preschool- and kindergarten –aged Asian American students highest among the five racial/ethnic groups. The largest difference between groups was between the Asian American and African American and Hispanic groups-with mean differences averaging 7 points higher for Asian Americans. Differences between the Asian American and Caucasian and Native American groups were considerably smaller- with, for example, means averaging 1.5 points in favor of Asian Americans over Caucasians.

Analysis of GRS-P Standardization Sample by Age

The MANOVA corresponding to age group did not yield significant results, $F(20, 1,092) = .68, p = .85$ (Wilks' Lambda = .96). Mean scores and standard deviations for GRS-P scale scores by age are presented in Table 4. GRS means scores were consistent and stable across the 3-year-age span 4:0–6:11.

DISCUSSION

The present study investigated correlation coefficients among GRS-P scale scores and age, gender, and race/ethnicity for the GRS-P standardization sample. The internal structure of the GRS-P, as depicted by the patterns of intercorrelations among scales, is consistent with and supports a multidimensional model of giftedness. Four of the seven intercorrelations were in the .70-.79 range. There is also evidence of multicollinearity -two or more of the scales sharing an underlying common factor. This is a reasonable hypothesis for the Intellectual Ability and Academic Ability scales. The particularly high correlation between the Intellectual Ability and the Academic Ability scales (.93) is consistent with previous findings between measures of intellectual ability and measures of academic ability in the general population (Pfeiffer & Jarosewich, 2007; Sattler, 2001; Sparrow, Pfeiffer, & Newman, 2005; Wechsler, 2002). Item level factor analysis conducted as part of the GRS-P (and GRS-S) test-validation process indicated that items on the Intellectual Ability and Academic Ability scales loaded on one principle factor (Pfeiffer & Jarosewich, 2003, p. 35).

It is not surprising that the highest correlation among GRS-P scales was between Intellectual Ability and Academic Ability, because these are believed by many to represent a similar if not identical underlying factor (Carroll, 1993; Flanagan, McGrew, & Ortiz, 2000). With a correlation of .93, these two scales have 86% shared variance. Also not unexpected is that in all instances the three lowest correlations among GRS-P scales included the Artistic Talent scale. For example, the Artistic Talent scale correlated with a coefficient value of .70 to the

Intellectual Ability scale; these two scales have 49% shared variance. These findings are consistent with the correlation coefficients among the six GRS-S scales designed for elementary- and middle-school students (Pfeiffer & Jarosewich, 2007). Future research should incorporate large samples using confirmatory factor analyses to further elucidate the relationships among the GRS-P scales. Future GRS-P research may be able to help answer the related questions of whether we can reliably measure the multiple manifestations of giftedness and if one underlying “g” actor explains most of the reliable variance accounted for in a teacher's ratings of a preschool or kindergarten student's level of potential or actual giftedness.

In the standardization sample, GRS-P mean scores differed significantly by gender for only one of the five scales, Artistic Talent. The difference was approximately $1/2 SD$ in favor of females. However, the overall effect size for gender is small. All other gender differences were not statistically significant, and ranged from 1 to 3 scale score points. On the GRS-S designed for elementary- and middle-school students, girls obtained significantly higher mean scores than boys on 3 of the 6 scales (Pfeiffer & Jarosewich, 2007). The gender differences for these GRS-S scales were in all instances small (i.e., a mean difference of 2.5 points for Leadership Ability, 3.5 points for Motivation, and 4 points for Artistic Talent); however, they are noteworthy, particularly since girls' mean scores are higher than boys' mean scores for all of the scales on both the GRS-P and GRS-S. Nationwide standardization sampling of the GRS followed a carefully prescribed and rigorous set of norming procedures. It is unlikely that the GRS-P standardization sample is unrepresentative or biased in a way that might explain the significant gender difference on Artistic Talent for preschool and kindergarten students on the GRS-P, or the small but significant differences on the Artistic Talent, Motivation, and Leadership scales with elementary- and middle-school students on the GRS-S. A more likely explanation is that teachers from preschool through middle school, who serve as raters, perceive girls, overall, as somewhat stronger in terms of artistic talent, motivation, and leadership ability, when compared to their same-age male counterparts.

It is important to reiterate that although the gender difference for Artistic Talent was statistically significant, it was small. Research indicates that gifted girls outperform gifted boys in classroom achievement throughout the school years, maintaining higher grades in all subjects (Kerr, 1997). Adolescence, however, appears to present subtle, yet insidious, cultural influences that moderate gifted, female achievement (Kerr & Nicpon, 2003). Interestingly, girls did not obtain higher mean scores than boys on either the GRS-P Intellectual Ability or Academic Ability scales. Intrigued by these provocative findings, our research laboratory recently initiated a school-based longitudinal study which will follow a large cohort of young children over a 10-year period to (a) explore the possible interaction of gender-by-age across the gifted domains measured by the GRS, and (b) discern whether boys and girls follow different trajectories of talent development. Another unanswered question is whether teacher gender differentially influences the ratings of young male and female students.

Analysis of the GRS-P standardization data identified significant differences by race/ethnicity, although the effect size was small ($\eta^2 = .05$). Asian American preschool and

kindergarten students were rated across scales, on average, approximately 1.5 points higher than 4- to 6-year-old Caucasian and Native American children in the standardization sample, and 7.0 points higher than 4- to 6-year-old African American and Hispanic children in the standardization sample. Interestingly enough, there were no significant differences for race/ethnicity among the 6- to 13-year-old elementary- and middle-school students in the GRS-S standardization sample (Pfeiffer & Jarosewich, 2003).

Although the present results were significant even when applying a Bonferroni correction, the results are not as powerful as they would be if we had used a single multivariate design. Future research should consider increasing the sample size in each of the three independent variables: age, race/ethnicity, and gender. Subsequent research may also want to examine the possible interaction of parent education level with race/ethnicity.

As mentioned above, it is unlikely that the small but significant race/ethnicity differences on the GRS-P are the result of sampling bias; the nationwide standardization sampling followed a carefully prescribed and rigorous set of norming procedures. The gifted field is concerned about fair and equitable identification practices, particularly since there is underrepresentation of African American, Hispanic, and Native American students in gifted education programs (Ford, 1998; Ford & Frazier-Trotman, 2001; Ford & Whiting, in press; Pfeiffer, 2002). Of course, every test is culturally loaded to some extent (Barona & Pfeiffer, 1992; Flanagan et al., 2000; Jensen, 1974; Rushton & Jensen, 2005). For example, picture vocabulary tests and portions of the Verbal Scale of the WISC-IV and Stanford Binet are highly culturally loaded, whereas nonverbal matrix tests and digit span memory tests are less highly culturally loaded (Jensen, 1974, 2004; Naglieri & Ford, 2003; Sattler, 2001). Along the hypothetical continuum of cultural loading, results indicate that the GRS-P is not strongly biased but is more closely aligned with nonverbal tests low in culture loading. Average differences across racial/ethnic groups were in the 1.5–7.0 point range (all less than 1 *SD*). Educators will be reassured that the GRSP's low cultural loading provides greater opportunity for typically underrepresented minority group children to be identified with a moderate-to-high probability of giftedness. The GRS-P manual emphasizes that the scale is designed as a screening tool to be used for identification purposes in conjunction with other measures, such as IQ tests, auditions, portfolio samples, and nonverbal tests, as part of a comprehensive test battery (Pfeiffer; Pfeiffer & Jarosewich, 2003)- a tactic which is consistent with best practices in preschool screening (Gridley, Mucha, & Hatfield, 1995).

An encouraging finding was that mean scores did not differ by age group on the GRS-P standardization sample. Educators and school psychologists who are asked to identify gifted students in preschool and kindergarten can be reassured that the GRS-P works equally well across the age span 4:0–6:11. Similarly, mean scores did not differ by age group for the 7-year age span 6:0–13:11 with the GRS-S standardization sample (Pfeiffer & Jarosewich, 2007). Future investigators may be interested in validating the present results with independent samples and specific groups of young children (e.g., the twice exceptional -the student who is gifted and disabled). In the research lab of the first author, a number of validation studies are underway, both in the U.S. and internationally, to cross-validate and extend the present findings.

Future studies will want to validate the long-range predictability of the GRS-P and the validity of each of the gifted scales. This will not be an easy undertaking, since establishing agreed upon “gold standards” for the Creativity and Artistic Talent scales will require thoughtful ingenuity. The test manual provides preliminary validity evidence in support of the GRS-P scales and external criteria (Margulies & Floyd, 2004); however, considerably more scale validation work is warranted.

The present study underscores that the GRS-P holds potential as a new screening test that can play an important role in the identification of gifted preschool and kindergarten students. The need to identify and intervene with gifted children at an early age is critical if we hope to improve their chances for optimal development.

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Table 1

Correlation Coefficients for Relations Among GRS-P Scale Scores

	Intellectual	Academic	Creativity	Artistic	Motivation
Intellectual	1.00				
Academic	0.93 [*]	1.00			
Creativity	0.85 [*]	0.86 [*]	1.00		
Artistic	0.70 [*]	0.75 [*]	0.72 [*]	1.00	
Motivation	0.83 [*]	0.85 [*]	0.76 [*]	0.77 [*]	1.00

*Note.**
p < .01 (2-tailed).

Table 2

Mean Scores and Standard Deviations for GRS-P Scale Scores by Gender

	<u>Girls (<i>n</i> = 187)</u>		<u>Boys (<i>n</i> = 188)</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Intellectual	51.98	9.53	49.97	11.22
Academic	51.14	9.82	48.87	11.27
Creativity	50.62	9.92	49.09	11.03
Artistic	52.67	9.97	47.08	9.48
Motivation	52.75	9.34	49.51	10.55

Table 3

Mean Scores and Standard Deviations for GRS-P Scale Scores by Race

	Asian American (<i>n</i> = 15)		African American (<i>n</i> = 59)		Caucasian (<i>n</i> = 66)		Hispanic (<i>n</i> = 66)		Native American (<i>n</i> = 7)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Intellectual	56.01	9.04	47.39	9.42	52.89	10.17	46.35	10.15	51.43	12.78
Academic	53.73	8.56	45.61	10.27	52.29	10.12	45.09	9.87	51.00	14.73
Creativity	52.60	6.60	45.90	10.27	52.07	10.32	45.15	9.21	49.29	14.58
Artistic	52.00	9.17	47.25	10.46	51.53	10.08	46.08	8.38	48.71	13.01
Motivation	54.27	12.12	47.46	9.47	52.13	10.08	48.39	9.25	52.00	14.13

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Table 4

Mean Scores and Standard Deviations for GRS-P Scale Scores by Age Group

	<u>4:00-4:05 (n = 75)</u>		<u>4:06-4:11 (n = 75)</u>		<u>5:00-5:05 (n = 75)</u>		<u>5:06-5:11 (n = 75)</u>		<u>6:00-6:05 (n = 75)</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Intellectual	50.73	9.67	50.81	10.57	50.77	10.95	51.32	10.63	51.24	10.66
Academic	49.65	10.03	50.05	10.42	49.76	10.44	50.35	11.54	50.20	10.62
Creativity	49.91	9.50	50.20	9.63	50.91	11.46	49.37	10.94	48.88	10.94
Artistic	49.85	9.57	49.43	9.73	50.15	10.48	49.51	10.32	50.39	10.65
Motivation	51.25	9.07	50.43	8.51	51.12	10.67	50.45	10.99	52.36	11.03