Psychology of Aesthetics, Creativity, and the Arts
2009, Vol. 3, No. 2, 104–111

1931-3896/09/$12.00 DOI: 10.1037/a0013324

Korean Concepts of Giftedness and the Self-Perceived Characteristics of Students Selected for Gifted Programs

Kyung Hee Kim
The College of William and Mary

Jae-Young Shim
Korea Advanced Institute of Science & Technology

Michael Hull
Eastern Michigan University

Fostering creativity among gifted students has become forefront as an important element in Korea's future economic prosperity. Since the passage of a gifted education act in 2002, all K-12 schools have been developing gifted programs. The first of two studies examines Koreans' concept of giftedness based on the implicit theory. Three hundred twenty-eight Koreans including scientists, parents, teachers, and college students described their concept of giftedness, which includes intelligence, task commitment, creativity, interpersonal relationship, moral sense, and artistic talent. The second study explores *self-reported* characteristics of Korean students identified as gifted and whether identification criteria for giftedness miss creative students by emphasizing IQ and achievement scores. One thousand one hundred fifty-four students (469 gifted in sciences, 285 gifted in humanities, and 400 regular students) answered a questionnaire developed from the first study. The results indicate that students identified as gifted tend to have higher intelligence and task commitment than regular students, but tend not to differ from regular students in creativity when compared to Renzulli's three rings concept of giftedness—above average ability, task commitment, and creativity.

Sternberg (1995) theorized that constructs of giftedness consist of two separate theories, implicit and explicit. Implicit theories are the common conceptions of giftedness utilized by both expert and laypersons. In contrast, explicit theories are based upon data developed and tested by experts attempting to more fully explain the concept of giftedness.

According to Sternberg (1995; Zhang & Sternberg, 1998), exploring implicit theories of giftedness is important for several reasons. First, implicit theories are based upon common cultural views prevalent in a specific society. Second, implicit theories form a basis for explicit theories. Third, implicit theories have the most influence on daily lives and practices. Fourth, understanding what these implicit theories consist of is necessary to improve identification, and practices, dealing with the gifted. Finally, implicit theories seem to have a privileged status in society because they form the basis of what society identifies and labels as gifted. Wallace (1987) confirmed that exceptional ability or talent can only operate within the immediate culture. If the culture does not recognize the talent or the giftedness, then it will remain stillborn, or regarded as anachronistic or avant garde. Giftedness cannot be studied separately from practice and is formed and utilized only in practice (DOČKAL, 1999). Sternberg and Zhang's (1995) pentagonal implicit theory of giftedness consists of intelligence, achievement, creativity, social skills, and motivation, and uses excellence, rarity, productivity, demonstrability, and value as five criteria in order to judge a person as gifted.

As an explicit concept of giftedness, Renzulli's three ring conception of giftedness (Renzulli,1978, 1986) suggests that giftedness comes from the interaction of above average ability, task commitment, and creativity. According to Renzulli (1997), general ability can be measured by intelligence or general aptitude tests. The rationale for above average ability originates from the conclusion that the relationship between ability and creative productivity is indirect rather than direct. Task commitment represents the desire to do a specific task. Creativity, in Renzulli's conception, came from the synonymous use among the words gifted, genius, and eminent, creators. Although the three rings do not have to be of equal size, they must be present and interact to some degree for creative and productive behavior to occur.

In another explicit concept of giftedness, Gagné (1995) suggested that the concept of giftedness consists of intellectual (e.g., reasoning, verbal, spatial, etc.), creative (e.g., originality, inventiveness, etc.), socioaffective (e.g., leadership, empathy, etc.), and sensorimotor capacity (e.g., strength, endurance, etc.). Piechowski (1986) explained the concept of giftedness as forms and expression of psychic overexcitability, consisting of psychomotor, sensual, intellectual, imaginational, and emotional overexcitabilities. Marland (1972) suggested that gifted students demonstrate achievement and/or potential in any of the following areas: general intellectual ability, specific academic aptitude, creative or productive thinking, leadership ability, visual/performing arts, and psychomotor ability. Finally, Frasier et al. (1995) examined the literature on characteristics of gifted students from 1957 to 1995, and found that the core attributes of giftedness were moti-

Kyung Hee Kim, School of Education, The College of William and Mary; Jae-Young Shim, Education Innovation Team, Korea Advanced Institute of Science & Technology, Daejeon, South Korea; Michael Hull, Department of Teacher Education, Eastern Michigan University.

Correspondence concerning this article should be addressed to Kyung Hee Kim, School of Education, The College of William and Mary, 329 Jones Hall, P.O. Box 8795, Williamsburg, VA 23187. E-mail: kkim@wm.edu

vation, communication skills, problem-solving ability, unusual interests, creativity, memory, inquiry, insight, reasoning, and humor.

The first study examines giftedness through a focus on implicit theories. Implicit theories may help with cross-cultural research on giftedness because they tend to reflect cultural perspectives (e.g., Ruzgis & Grigorenko, 1994). By understanding implicit as well as explicit theories, people who make day-to-day decisions about giftedness, as well as psychological or educational theorists, may obtain a better grasp of what giftedness means (Sternberg, 1993). In order to ensure that gifted programs best serve their students, it is important for educators to select a well-defined concept of giftedness and use that concept to determine identification procedures (Kontos, Carter, Ormrod, & Cooney, 1983).

Recently, fostering creativity among gifted students has come to the forefront as an important element in the future of Korea's economic prosperity. The Korean government passed a Gifted Education Act in April of 2002 that initiated gifted education programs in every elementary, middle, and high school (Korean Educational Development Institute, 2003). The Korean Gifted Education Program has been highly interested in creativity; especially focusing on mathematics and science. The Korean Educational Development Institute, (2003) identified and served, 0.28% of the student population as gifted. Eighty-two percent of the students are science and mathematics gifted (science: 42.8%; mathematics: 39.2%); 18% of are computer, music, arts, or English gifted. The definition of giftedness of the Korean Gifted Education Program is fairly eclectic, borrowing from Marland (1972); Renzulli (1978); Gardner (1983), and Sternberg (1999). However, the current selection criteria for admission to a gifted program are contradictory to the national agenda because selection is limited to the single criterion of academic achievement including grade point average (GPA), entrance exam scores, or achievement scores. Thus, gifted education is still new and as such a single and uniform construct for giftedness, creativity, or selection of students for gifted programs has yet to be agreed upon.

Therefore, the second study examines the criteria for identifying gifted students in Korea. Renzulli's (1978) three-ring conception of giftedness suggests that giftedness comes from the interaction of above average ability, task commitment, and creativity. Thus, when we identify gifted students, we should consider all of these three criteria. In Korea, however, the criteria for identifying gifted students are mainly focused on above average ability and task commitment, which is inconsistent with their goal of fostering creativity.

One example attempting to identify gifted students utilizing all three criteria can be found in Georgia Department of Education's (1998; Krisel & Cowan, 1997) multiple criteria for identifying gifted students. According to Georgia' rule, in order to be eligible for gifted programs, (A) a student must either score at the 99th percentile (for kindergarteners–2nd graders) or the 96th percentile (for 3rd–12th graders) on the composite or full-scale score of a standardized intelligence test and meet the achievement criteria, or (B) qualify through a multiple-criteria assessment process by meeting the criteria in three of the following four areas: intelligence, achievement, creativity, and motivation. In Korea, however, the criteria for identifying gifted students are students' GPA, entrance exam scores, or high achievement scores within their specific gifted areas. Therefore, we will examine gifted programs and schools' criteria for identifying gifted students. The purpose of the second study was to explore the *self-reported characteristics* of the Korean students identified as gifted, to compare the self-reported characteristics among the students in the sciences gifted program, the students in the humanities gifted program, and the regular students, and to give some suggestions to improve the Korean criteria to identify gifted students.

Thus, the research questions of this study are as follows:

1. What are the concepts of giftedness among Koreans?
2. Are there any differences in giftedness between implicit and explicit theories?
3. Do the students identified as gifted self-report these characteristics of giftedness?
4. What are the similarities and differences in the self-reported characteristics among the students in the sciences gifted program, the students in the humanities gifted program, and the regular students?
5. Are the students identified as gifted more creative than the regular students?

Method for Study 1

Participants for Study 1

For the first study, the total number of participants were 328 (245 males & 83 females), including 71 scientists (64 males & 7 females), 73 parents of school-age children (71 males & 2 females), 104 teachers (89 males & 15 females), and 80 college students (21 males & 59 females) in Daejeon, Korea.

Table 1
% of Responses for the Concepts of Giftedness (Intelligence, Task Commitment, Creativity, Interpersonal Relationship, Moral Sense, and Artistic Talent)

Respondents	Teachers (n = 104)	Students (n = 80)	Parents (n = 73)	Scientists (n = 71)
Intelligence	43.24%	66.67%	50.67%	36.68%
Task commitment	26.13%	16.67%	24.67%	23.62%
Creativity	21.62%	11.67%	15.33%	22.11%
Interpersonal relationship	6.31%	5%	4%	5.03%
Moral sense	2.70%	0%	0%	8.54%
Artistic talent	0%	0%	5.33%	4.02%
Total	100%	100.1%	100%	100%

Note. N = 328.

Table 2
Factor Loadings of and Variances Explained by the Items of the Questionnaire

Factor (# of Items) [Variance explained]	Item (N = 77) Item #	Content	Factor loading
Intelligence (21 items) [19.559%]	62	I enjoy solving complicated problems.	.746
	77	I enjoy finding new problems.	.640
	76	I can solve new problems based on observations.	.634
	63	I can understand difficult problems quickly.	.633
	28	I attempt to solve problems in areas that I do not have prior knowledge.	.622
	4	I like solving problems better than memorization.	607
	70	I have ability to focus on problems.	.562
	49	I am interested in problems that require various thinking abilities.	.548
	31	I like applying my existing knowledge to new problems.	.548
	37	I like exploring problems in depth.	.542
	45	I like looking at underlined reasons.	.523
	15	I use a thinking process to solve problems.	.491
	21	Others rely on me to solve problems.	.484
	61	I learn from attempting to solve problems even if I fail.	.440
	38	I have different thought processes than others.	.439
	18	I am good at identifying problems.	.429
	69	I have superior reasoning abilities.	.418
	41	I enjoy learning.	.415
	30	I learn easily.	.363
	43	I am not afraid of difficult subjects.	.287
	58	I excel in one or more areas.	.281
Creativity (16 items) [6.567%]	27	I have more ideas than my peers.	.734
	59	I have many unusual ideas.	.598
	24	I am imaginative.	.538
	50	I enjoy challenges.	.481
	17	I am curious to learn and know.	.434
	29	I have variety of interests.	.430
	65	I have original thinking.	.409
	66	I have my own ways of doing things.	.401
	40	I like tasks that have multiple answers.	.395
	54	I dislike following restrictive rules.	.353
	52	I enjoy adventures.	.353
	71	I enjoy listening to music.	.347
	3	I lose track of time easily.	.289
	25	People say I am stubborn.	.275
	39	I focus on certain interests.	.191
	42	I remember things from my past.	.181
Task commitment (13 items) [5.398%]	64	I am very competitive.	.572
	14	I work hard to achieve my goals.	.546
	6	I am self-starter.	.535
	19	I work hard for better results.	.477
	56	I set intermediate goals to achieve ultimate goals.	.472
	74	I am very responsible.	.438
	75	I can achieve if I try.	.379
	32	I am self-confident.	.375
	5	I can memorize if I try.	.355
	72	I do not procrastinate.	.316
	16	I cannot focus on problems (–).	.285
	12	I easily understand others′ issues.	.277
	8	I follow others′ plans (–).	.172
Interpersonal relationship (12 items) [4.526%]	53	I have many friends.	.713
	7	I am personable.	.670
	57	Others like playing with me.	.615
	51	I enjoy working alone (–).	.479
	26	I have a good sense of humor.	.447
	2	I am good at speaking.	.441
	44	I have leadership among friends.	.439
	20	My friends depend on me.	.405
	60	I enjoy school.	.381
	23	I enjoy being with friends.	.361
	46	I can express myself.	.355
	22	I enjoy learning in groups.	.314

(*table continues*)

Table 2 (*continued*)

Factor (# of Items) [Variance explained]	Item (*N* = 77) Item #	Content	Factor loading
Moral sense (9 items) [2.981%]	10	I respect others.	.660
	34	I listen to what others say.	.589
	9	I am thankful for small things.	.581
	47	I do not mind waiting in line.	.523
	13	I am very forgiving.	.443
	11	I am honest.	.428
	67	I yield to my friends′ desires.	.409
	73	I am polite.	.390
	33	I want to please my parents.	.336
Artistic talent (6 items) [2.052%]	55	People say I am good with my hands.	.456
	48	I appreciate the arts.	.428
	35	I am good at seeing things in an artistic light.	.392
	68	I am good at playing a musical instrument.	.358
	1	My art is very detailed.	.331
	36	I am sensitive.	.247

Note. Extraction method: maximum likelihood. Rotation method: Oblimin with Kaiser normalization. (–): Coded inversely.

Research Procedures and Data Analysis for Study 1

For the first study, an open-ended questionnaire was administered to 328 participants. The participants received a blank sheet of paper on which to list as many characteristics of giftedness as possible. They were asked to spend 5–10 min on the task, were told that their answers would be confidential, and that there were no correct or incorrect answers. The length of their responses varied from one phrase to one whole page. Only responses listed by at least two participants were considered. Descriptors were gathered and classified into several categories. These were compared with those from previous studies.

Results for Study 1

The major concepts of giftedness described by the Koreans who participated in this study were identified, which revealed six categories of concept of giftedness: intelligence, task commitment, creativity, interpersonal relationship, moral sense, and artistic talent.

Examples of some of the responses identifying intelligence were high IQ, high cognitive ability, highly intelligence, high potential, learns quickly, good comprehension, good problem solving skills, good memory, good vocabulary, high cognitive thinking, good analysis, observant, highly deductive, logical thinker, critical thinker, and intuitive.

Examples of some of the responses identifying task commitment were competitive, challenging mind, goal-oriented, high-expectation, relentless, focused, self-guided learning, self-confident, high endurance, highly motivated, hardworking, internal locus of control, power of execution, responsible, and diligent.

Examples of some of the responses identifying creativity were original thinking, creative thinking, imaginative, do not care about rules, inquisitive, curious, creative problem solving, think out of the box, live in fantasy, divergent thinking, cognitive flexibility, open-minded, fluent, and adventurous.

Examples of some of the responses identifying interpersonal relationship were leadership skills, adaptive to new environments, self-expressive, good at speaking, outgoing, personable, persuasive, and communication skill.

Examples of some of the responses identifying moral sense were good personality, generous, kind, observe public morals, honest, thankful, law-abiding, good to public, polite, and filial piety.

Examples of some of the responses identifying artistic talent were crafty, sensitive, good at drawing, can play musical instruments, appreciation of music, and appreciation of art.

Percents of the responses to the concepts of giftedness were calculated as the number of responses divided by the total number of each group and are shown in Table 1.

Intelligence as giftedness: students (67%) and parents (50%) primarily thought of intelligence as a gifted trait, which is consistent with common view that high intelligence is "gifted." Teachers (43%) and scientists (36%) thought of intelligence as a gifted trait. However, teachers and scientists had expanded views of giftedness; for example, they thought other things besides intelligence are traits of the gifted.

Task commitment as giftedness: 17% of the students, 26% of teachers, and 24% of the parents and scientists thought task commitment is important, which indicated that more adults tend to view task commitment as giftedness than students. This could also indicate a gender difference because there were nearly three times as many females as males in the student sample, whereas females made up less than 10% of the adults sampled.

Creativity as giftedness: 12% of the students, 15% of the parents, and 22% of teachers and scientists thought creativity is important, which is consistent with Renzulli's view.

Method for Study 2

Participants for Study 2

One thousand one hundred fifty-four Korean middle and high school students (580 males and 573 females, one student did not report gender) participated in the second study. Among the 1,154 students, 469 were students in the sciences gifted program, 285 were students in the humanities gifted program, and 400 were regular students. In Korea, secondary school students are typically divided into two different fields: The sciences field (in which mathematics and sciences are emphasized) and the humanities field (in which lan-

guages, social studies, arts, etc. are emphasized). The students in the gifted programs were identified as gifted by the Korean gifted identification criteria of high IQ, GPA, and creative problem-solving ability. However, difficult mathematics or sciences questions were given to the students for the sciences gifted program, and difficult English questions were given to the students for the humanities gifted program for creative problem-solving ability as one of the identification criteria for gifted programs.

Research Procedures and Data Analysis for Study 2

For the second study, items of characteristics of giftedness were developed based on the results of the first study, yielding a list of 165 behaviors, each of which was suggested by at least two respondents. A questionnaire was developed based on the list of 165 behaviors. Each item is answered on a Likert scale (1: *always* −4: *never*). Items ask students to indicate how often each of the phrases describes their characteristics and behavior. Seven 1st-year-middle school students reviewed the items to determine and modify words and sentences too difficult for the students to understand. The questionnaire was administered to 30 students identified as gifted and 20 regular students for a pilot study. Item analyses were conducted based on comments provided by five college professors and graduate students who majored in gifted education. Eighty-eight items that had similar meanings to other items were removed, and the wording of other items was changed as a result of the item analyses. The final questionnaire with 77 items was administered to 1,154 students including 469 students in the sciences gifted program, 285 students in the humanities gifted program, and 400 regular students. However, among the 1,154 students, 139 of them did not complete the questionnaire thus only 1,015 students were included in the data analysis. Internal consistency coefficient of the questionnaire was .933. Among the 1,015 students, 422 students (253 males and 169 females) were students in the sciences gifted program, 259 students (83 males and 176 females) were students in the humanities gifted program, and 334 students (162 males and 172 females) were regular students. An exploratory factor analysis was conducted on the data from these students. Six factors (intelligence, creativity, task commitment, interpersonal relationship, moral sense, and artistic talent), which accounted for 41.083% of the variance, were yield. Factor loadings of and variances explained by each item of the questionnaire are shown in Table 2.

Results for Study 2

To examine main field (students in the sciences gifted program, students in the humanities gifted program, and regular students) and main gender effects as well as field × gender interaction effect, a 3 × 2 (field × gender) factorial MANOVA was conducted. Significant main field, Wilks's $\Lambda = .788$, $F(12, 2008) = 21.142$, $p < .05$, and gender effects, Wilks's $\Lambda = .935$, $F(6, 1004) = 11.658$, $p < .05$, were found. No field× gender interaction effect, Wilks's $\Lambda = .986$, $F(12, 2008) = 1.218$, $p = .264$, was significant.

As follow-up tests to the MANOVA, ANOVAs on each factor (intelligence, task commitment, creativity, interpersonal relationship, moral sense, and artistic talent) were conducted to determine their contribution to the significant main gender effect. Significant gender differences (females > males) both in task commitment, $F(1, 1009) = 14.572$, $p < .008$, and in artistic talent, $F(1, 1009) = 14.655$, $p < .008$, were found after the Bonferroni correction, $p < \alpha = .008[.05/6]$.

Post hoc analyses to the univariate ANOVA for field consisted of conducting pairwise comparisons to find which factor affected field most strongly. Each pairwise comparisons was tested at the α level of .002([.05/6]/3). The multivariate test for homogeneity of dispersion matrices, Box's Test, was significant, $F(105, 798340) = 1.967$, $p < .05$. Thus, the Dunnett's C test was used because it is one of the multiple comparison procedures that do not require population variances to be equal.

In Factor Intelligence as Table 3 shows, the students in the sciences gifted program were significantly higher in comparison with either of the students in the humanities ($p < .002$) gifted program or the regular students ($p < .002$), and the students in the humanities gifted program were significantly higher than the regular students ($p < .002$).

In factor task commitment as Table 4 shows, the students in the humanities gifted program were significantly higher in comparison with either of the students in the sciences gifted program ($p < .002$) or the regular students ($p < .002$), and the students in the sciences gifted program were significantly higher than the regular students ($p < .002$).

In factor interpersonal relationship as Table 5 shows, the students in the humanities gifted program were significantly higher in comparison with the regular students ($p < .002$). The students in the sciences gifted program were significantly different neither from the students in the humanities gifted program ($p = .151$) nor from the regular students ($p = .076$).

In factor moral sense as Table 6 shows, the students in the humanities gifted program were significantly higher in comparison with either of the students in the sciences gifted program ($p < .002$) or the regular students ($p < .002$), and the students in the

Table 3
Means, SDs, and Pairwise Differences of Intelligence Scores

	M		*SD*		*n*			
Field gender	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	Sciences ΔM	Humanities ΔM
Sciences Gifted	2.999		.459		422		—	—
	3.040	2.937	.480	.420	253	169		
Humanities Gifted	2.869		.440		259		.130*	—
	2.909	2.851	.418	.450	83	176		
Regular	2.563		.494		334		.436*	.306*
	2.599	2.529	.469	.516	162	172		

Note. $N = 1{,}015$. * $p < .002$ using the Dunnett's C; ΔM = Mean difference (column − row).

Table 4
Means, SDs, and Pairwise Differences of Task Commitment Scores

	M		*SD*		*n*			
Field gender	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	Sciences ΔM	Humanities ΔM
Sciences Gifted	2.971		.428		422		—	—
	2.919	3.047	.444	.390	253	169		
Humanities Gifted	3.120		.386		259		–.149*	—
	3.083	3.138	.411	.373	83	176		
Regular	2.734		.464		334		.237*	.387*
	2.661	2.802	.415	.498	162	172		

Note. $N = 1{,}015$. * $p < .002$ using the Dunnett's C; ΔM = Mean difference (column − row).

sciences gifted program and the regular students were not significantly different from each other ($p = .657$).

In factors artistic talent and creativity as Table 7 and Table 8 show, however, there were no statistically significant differences among the students in the sciences gifted program, the students in the humanities gifted program, and the regular students.

Discussion

Compared to Renzulli's (1986), giftedness comes from the interaction of above average ability, task commitment, and creativity, this study identified additional traits, specifically interpersonal relationship, moral sense, and artistic talent. This is similar to studies on Chinese (rather than Western) understanding of creativity using implicit theory of creativity (Rudowicz, Hui, & Ku-Yu, 1995; Rudowicz & Hui, 1997). The results included items that are not recognized in the Western view, such as contributions to society and inspiring people, and the results excluded items that are considered important in Western view, such as humor. Previous studies reported contrasting views of creativity between Western and Eastern people. Western people tend to have humor and aesthetic appreciation, are individualistic, and value self-exploration, whereas Chinese people do not consider the traits of creative persons as important, are collective, and value social and moral value to society (Rudowicz & Yue, 2000). However, in the present study, Korean people considered artistic talent as one of the concepts of giftedness, which previous studies found only among Western people. Considering moral sense as a characteristic of giftedness is consistent with a previous study (Seo, Lee, & Kim, 2005) that explored Koreans' understanding of creativity using the implicit theory of creativity, indicating that Korean teachers tend to ignore one of the 4 P's (Person, Process, Product, and Press). Koreans tend to ignore press (environment) and identify how creativity affects society, which is similar to the concept of moral sense in the present study. In contrast, Western society tends to identify how the environment affects creativity.

In the second study, the self-reported characteristics of the students in the sciences gifted program, the students in the humanities gifted program, and the regular students were explored using the questionnaire that was developed based on the results of the first study.

Female students are higher in task commitment as compared with male students, which can be explained by the male-dominant society of Confucianism (Kim, 2007) in which females have to work harder than males to achieve the same benefit as males.

Female students are higher in artistic talent compared to male students, which can be explained by gender role expectations of Confucianism (Kim, 2007) in which artistic expressions are considered as girls' job; thus, more girls try to express their artistic talent than boys.

In terms of intelligence, students in the sciences gifted programs seem to have the highest, students in the humanities gifted programs seem to have the next highest, and regular students seem to have the lowest. This might be explained by the fact that the questions related to intelligence contain many problem-solving abilities and that students in the sciences gifted programs may be better in these areas. The results that students identified as gifted from the both area have higher intelligence than regular students are consistent with the identification criteria for gifted students in Korea in that students' IQ is highly weighted.

Table 5
Means, SDs, and Pairwise Differences of Interpersonal Relationship Scores

	M		*SD*		*n*			
Field gender	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	Sciences ΔM (p)	Humanities ΔM (p)
Sciences Gifted	2.857		.487		422		—	—
	2.828	2.902	.499	.467	253	169		
Humanities Gifted	2.930		.467		259		–.072 ($p = .151$)	—
	2.978	2.907	.513	.443	83	176		
Regular	2.780		.519		334		.078 ($p = .076$)	.150*
	2.714	2.841	.475	.551	162	172		

Note. $N = 1{,}015$. * $p < .002$ using the Dunnett's C; ΔM = Mean difference (column − row).

Table 6
Means, SDs, and Pairwise Differences of Moral Sense Scores

	M		*SD*		*n*			
Field gender	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	Sciences ΔM (p)	Humanities ΔM (p)
Sciences Gifted	2.937		.350		422		—	—
	2.934	2.942	.363	.330	253	169		
Humanities Gifted	3.036		.314		259		–.099*	—
	3.058	3.025	.330	.307	83	176		
Regular	2.914		.395		334		.023 (p = .657)	.121*
	2.866	2.960	.407	.379	162	172		

Note. N = 1,015. * $p < .002$ using the Dunnett's C; ΔM = Mean difference (column − row).

In terms of task commitment, students in the humanities gifted programs tend to work harder than either of students in the sciences gifted programs or regular students. This might be explained related to the results for intelligence in that students in the sciences gifted programs may think that they have high intelligence, therefore, they do not have to work as hard, whereas students in the humanities gifted programs may not possess as high an opinion of their intelligence and, therefore, work more diligently. Similarly, students in the sciences gifted programs may be entity believers, whereas students in the humanities gifted programs may be incremental believers. Entity believers feel that their intelligence is rigid and beyond control and that no amount of effort will change the innately fixed level of intelligence, whereas incremental believers feel that their intelligence is changeable and controllable and that intelligence can improve with effort (Dweck & Bempechat, 1983; Dweck & Elliott, 1983). The results that students identified as gifted from either area have higher task commitment are consistent with the identification criteria for gifted students in Korea in that student achievement scores or GPA are highly weighted. Thus, students identified as gifted in Korea are those who have worked harder than regular students.

In terms of moral sense, students in the humanities gifted programs tend to have higher moral sense than either of students in the sciences gifted programs or regular students. This can be explained by the fact that students in the humanities gifted programs, by definition, tend to be concerned with human thought, culture or liberal arts so that they have higher moral sense than students in the sciences gifted programs or regular students. Further, students in the sciences gifted programs have a similar level of moral sense to regular students.

In terms of interpersonal relationship, students in the humanities gifted programs tend to have higher skills than regular students. This can be explained by the fact that students in the humanities gifted programs tend to be concerned with human thought, culture, or liberal arts, so that they may place a higher value on their relationships with other people. However, students in the sciences gifted programs are not significantly different from either students in the humanities gifted programs or regular students in terms of interpersonal relationship.

In terms of either artistic talent or creativity, there are no differences among students in the sciences gifted programs, students in the humanities gifted programs, and regular students. This might indicate that the Korean gifted student identification procedures overlook creative students. Creativity has been identified as another important ability that is predictive of a child's potential (Cramond, Matthews-Morgan, Bandalos, & Zuo, 2005; Torrance, 2002). Runco (1993) also emphasized that creativity is a vital component of giftedness. Torrance (1962, 1970) concluded that when gifted children are identified on the basis of intelligence tests and scholastic aptitude test, over two thirds of the top 20% of the most highly creative students were missed. Educational hierarchy poses a challenge to teaching and promoting creativity with its current emphasis on grades and achievement. The old guard is threatened by true change. "Stuffed-duck" education turns gifted programs into acceleration, thus no enrichment, added depth, or creativity.

Table 7
Means, SDs, and Pairwise Differences of Creativity Scores

	M		*SD*		*n*			
Field gender	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	Sciences ΔM (p)	Humanities ΔM (p)
Sciences Gifted	2.898		.555		422		—	—
	2.921	2.863	.572	.527	253	169		
Humanities Gifted	2.920		.506		259		–.022 (p = .868)	—
	2.953	2.904	.520	.500	83	176		
Regular	2.796		.601		334		.101 (p = .036)	.124 (p = .021)
	2.762	2.829	.554	.642	162	172		

Note. N = 1,015. None of the ΔM*s were significant at* $\alpha = .002$ using the Dunnett's C; ΔM = Mean difference (column − row).

Table 8
Means, SDs, and Pairwise Differences of Artistic Talent Scores

	M		*SD*		*n*			
Field gender	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	Sciences ΔM (p)	Humanities ΔM (p)
Sciences Gifted	2.625		.555		422		—	—
	2.581	2.691	.552	.554	253	169		
Humanities Gifted	2.616		.559		259		.009 (p = .975)	—
	2.548	2.648	.585	.545	83	176		
Regular	2.514		.569		334		.112 (p = .017)	.102 (p = .068)
	2.403	2.617	.562	.557	162	172		

Note. N = 1,015. None of the ΔM*s were significant at* α = .002 using the Dunnett's C; ΔM = Mean difference (column − row).

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Received April 23, 2008
Revision received June 17, 2008
Accepted June 20, 2008 ■