

Profiles of Overexcitabilities for Korean High School Gifted Students According to Gender and Domain of Study

Jeong hwa Moon (JaiNeung College)*

Diane Montgomery (Oklahoma State University)

Abstract

Overexcitability (OE) as a concept that is related to developmental potential, has been shown to differ by intelligence, gender, involvement in school programs and artistic interest in American populations of students. Overexcitability, used to describe the five ways that people might experience developmental potential for emotional growth, are emotional, intellectual, imaginal, sensual, and psychomotor.

Little is known about the profiles of groups of gifted learners outside of studies conducted in the United States. In order to better understand the emotional needs of Korean students, the purpose of this study was to determine the overexcitability profiles of students enrolled in four high schools, each with a different domain focus: math and sciences, visual and performing arts, and foreign languages.

341 subjects of this study completed the Overexcitability Questionnaire II. Multivariate Analysis of Variance (MANOVA) was conducted to determine statistical differences. The results showed that Mean scores of psychomotor, sensual and imaginal are highest in the Art High School, intellectual is highest in the Science High School and emotional is highest in the Foreign Language High School. There were significant differences among the schools. Each major also showed significant difference. The results showed that mean score of psychomotor is highest in the Dance major, sensual, imaginal and emotional are highest in the Drama major and intellectual is highest in the Science major. The results showed that the mean scores of psychomotor, imaginal and intellectual are higher in the male students than female students. On the other hand the mean scores of sensual and emotional are higher in the female students than in the male students.

Key words : Overexcitability, Korean High School Students, High School gifted

* 교신저자 : 문경화 (54321m@hanmail.net)

Adolescence is an overwhelming period of life when normal human development results in transitions for any individual. These changes in psychological, physiological, social, and intellectual areas occur for all students, including those who are gifted (Genshaft, 1991; Monks & van Boxtel, 1985; Silverman, 1993). Experts in gifted education continue to advocate for a specialized understanding in meeting the unique needs of social and emotional development (Cross, 2001; Delisle, 1992; Neihart, Reis, Robinson, & Moon, 2002; Schmitz & Galbraith, 1985; Strop, 2002) as well as responding to the needs of advanced intellectual development for those students who have gifts, talents, or high potential.

Piechowski (1979) interpreted the unique social and emotional needs of gifted within the theoretical framework of Dabrowski's (1964) Theory of Positive Disintegration (TPD). Later, he demonstrated the usefulness of the theory as a way to broaden the conceptualization of giftedness (Piechowski, 1986). Although there are levels of personality development described in TPD, it is not considered a stage theory that represents normal, sequential, invariant development for all people. Rather, advanced development is not common and might be a filled with anguish as one deals with the lower levels disintegrating into the higher levels. An indicator of developmental potential (related to innate abilities and special talents) is an intense experience in any of five areas, called the overexcitabilities (OE). They are emotional, intellectual, imaginal, sensual, and psychomotor. These OE have been of particular interest to gifted education (O'Connor, 2002), particularly as they relate to social and emotional development.

Overexcitability (OE), as a concept that is related to developmental potential (Dabrowski, 1964), has been shown to differ by intelligence (Ackerman, 1997; Miller, Silverman & Falk, 1994; Piechowski & Colangelo, 1984), gender (Bouchet & Falk, 2001; Breard, 1994, Piechowski & Miller, 1995), involvement in school programs (Bouchet & Falk, 2001; Gallagher, 1985) and artistic interests (Piechowski & Cunningham, 1985; Piirto, 1999; Piirto, Cassone,

Ackerman & Fraas, 1996) in American populations of students. Understanding the profiles and differences in overexcitability is thought to be unique to people who possess developmental potential.

With the notable exception of Piirto, et al (1996), little is known about the profiles of groups of gifted learners outside of studies conducted in the United States. In order to better understand the emotional needs of Korean students, the purpose of this study was to determine the overexcitability profiles of gifted students enrolled in four high schools, each with a different domain of study: math and sciences, visual and performing arts, and foreign languages. This study surveyed two schools for the arts and one school for foreign language and science, respectively.

Method

Students enrolled in four domain-specific high schools in Seoul, Korea were invited to participate in the study. Permission to translate the *Overexcitability Questionnaire II* (Falk, Lind, Miller, Piechowski, & Silverman, 1999) was obtained by email from Dr. Falk, who recommended a reverse translation to increase accuracy. The OEQII was designed as a research tool to better understand groups of students (rather than having any individual diagnostic implications). Two Korean professors with advanced degrees translated the OEQII. It was administered in group sessions at each of the four high schools in the spring of 2004. After a description of the purpose of the study, those students who consented to participate completed the OEQII. Data were analyzed with SPSS. Descriptive statistics provided a view of general differences; Multivariate Analysis of Variance (MANOVA) was conducted to determine statistical differences.

Results

Of the total school enrollment of 3,865 students at all four schools, 341 completed the study. A description of gender and major area of study at each school is provided in <Table 1>. The sample reflects the enrollment at each school with more males than females attending the Science School; whereas, there are more female than male attendances for the Foreign Language High School and Art High Schools. Of the 313 enrolled at the Seoul Science High School, 102 students participated in the study. Of the 1,320 enrolled at the Daewon Foreign Language High School, 73 students completed the study. There were 1,152 students enrolled in painting, music, or dance at the Sun Hwa Arts High School and 1,080 enrolled in all majors at the Anyang High School of Arts. Only the drama majors at the Anyang High School of Art were invited to participate (no drama major at Sun Hwa). There 166 from the two art schools who finished the study.

<Table 1> Demographics of Students in the Study

High School	Major	Gender		Total
		Male	Female	
Science	Science	66	36	102
Foreign	Spanish	14	18	32
Language	French	16	25	41
Total		30	43	73
Art High	Drama	13	31	44
	Dance	0	35	35
	Music	5	40	45
	Painting	3	39	42
Total		21	145	166
Total		117	224	341

Reliability was calculated using Cronbach's alpha for all five scales using the 341 instruments completed in the study. Coefficients ranged from .69 to .83. Emotional OE was the lowest with .69; Intellectual and Sensual OE were both .83, with Psychomotor OE at .72 and Imaginational at .75. Information in

<Table 1> indicates the large differences in the comparative sizes of the gender groups in the schools, which led to the initial analysis of data by school and then by gender. The means and standard deviations for each of the five overexcitabilities for each school are presented in <Table 2>.

<Table 2> Means and Standard Deviations for OE scales by School.

	Psychomotor		Sensual		Imagination		Intellectual		Emotional	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Science High	3.33	.60	3.68	.67	3.22	.59	3.70	.55	3.66	.49
Foreign Language	3.24	.57	3.68	.63	3.24	.57	3.40	.53	3.75	.55
Art High School	3.38	.58	3.74	.66	3.27	.62	3.32	.71	3.73	.57
Total	3.33	.58	3.71	.65	3.25	.60	3.45	.65	3.71	.54

The results show that the Mean scores of psychomotor, sensual and imaginal are highest in the Art High School, intellectual is highest in the Science High School and emotional is highest in the Foreign Language High School. The Wilks' Lambdas multivariate F results for OE in each school, $F(10, 668) = 6.169, p < .01$ shows significant differences among the schools.

The means and standard deviations for each of the five overexcitabilities for each major are presented in <Table 3>.

<Table 3> Means and Standard Deviations for OE scales by Major

	Psychomotor		Sensual		Imaginational		Intellectual		Emotional	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Science	3.33	.60	3.68	.67	3.22	.59	3.70	.55	3.66	.49
Spanish	3.18	.57	3.73	.62	3.13	.61	3.27	.61	3.74	.68
French	3.29	.57	3.65	.64	3.32	.54	3.50	.45	3.77	.43
Drama	3.45	.54	3.82	.47	3.49	.45	3.35	.57	3.85	.50
Dance	3.48	.62	3.72	.71	3.06	.64	3.33	.77	3.64	.63
Music	3.44	.52	3.71	.70	3.22	.55	3.33	.73	3.83	.48
Painting	3.15	.59	3.69	.76	3.29	.75	3.27	.80	3.58	.65
Total	3.33	.58	3.71	.65	3.25	.60	3.45	.65	3.71	.54

The results show that the mean score of psychomotor is highest in the Dance major, sensual, imaginal and emotional are highest in the Drama major and intellectual is highest in the science major. The Wilks' Lambdas multivariate F results for OE for each major, $F(30, 1322)=3,449$, $p<.01$ shows significant differences.

The means and standard deviations for each of the five overexcitabilities for each gender are presented in <Table 4>.

<Table 4> Means and Standard Deviations for OE scales by Gender

	<u>Psychomotor</u>		<u>Sensual</u>		<u>Imaginational</u>		<u>Intellectual</u>		<u>Emotional</u>	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Male	3.41	.59	3.64	.68	3.28	.58	3.56	.61	3.64	.54
Female	3.29	.58	3.74	.63	3.24	.61	3.39	.66	3.76	.54
Total	3.33	.58	3.71	.65	3.25	.60	3.45	.65	3.71	.54

The results show that the mean scores of psychomotor, imaginal and intellectual are higher in the male students than in the female students. On the other hand the mean scores of sensual and emotional are higher in the females students than in the male students. The Wilks Lambdas multivariate F results for OE for each gender, $F(5,335) = 5.299$, $p<.01$ shows significant differences.

In the analysis of the gender differences in the science high school, the mean scores of psychomotor and imaginal are found to be higher for the male students, whereas, the sensual, intellectual and emotional are found slightly higher for the female students. The Wilks Lambdas Multivariate F result for OE, though, shows no significant differences between these male and female students from the science high school ($F(5, 96) = .612$, $p>.01$). However, in the case of foreign language high school, the mean scores of psychomotor and intellectual are higher with the male students than with the female students

while the sensual, imaginational and emotional are higher for the female students than for the male students. The Wilks Lambdas Multivariate F result for OE also shows significant differences ($F(5, 67) = 3.502, p < .01$).

Discussion

The results reveal the profiles by school, major and gender. Almost all the results were as expected. All the subjects in this study are identified as gifted and talented in those respective areas during the time of their admission. The attention of the specialized school stimulates the differences in the profiles. The majors from the two Art High Schools have the highest sensual and imaginational OE, which is intuitively expected and is consistent with the American findings. Also consistent with results from other American studies, is the finding that the females were higher on the emotional OE and males on the intellectual OE. Another finding similar to those of an American sample (Bouchet & Falk, 2001), although unanticipated, was that the imaginational scales were higher for males than females. The potential speculation for the gender differences for the imaginational scale appears to relate to broad socialization for women, rather than specific cultural implications. An analysis of variance will be conducted later to determine statistical differences by school and by gender. Additionally, it would be interesting to study the reasoning behind the lack of difference for OE between male and female students of science high school

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국 문 요약

한국 고등학교 영재 학생들의 성별과 전공에 따른 과민홍분성에 대한 프로파일

문 정 화 (재능대학)

Diane Montgomery (오클라호마주립대학교)

발달 잠재력과 관련된 개념으로서 과민홍분성(OE)은 미국 학생들의 경우 지능, 성별, 학교 프로그램에의 연류, 그리고 예술적 관심에서 차이를 보였다. 사람들이 정서적 성장을 위한 발달 잠재력을 경험하는 과민홍분성은 다섯 가지 방법으로 설명할 수 있는데, 이는 정서적, 지적, 상상적, 감각적, 그리고 정신운동성이다.

미국에서 수행된 연구 외에 영재아 그룹의 프로파일에 대해서는 알려진 것이 거의 없다. 한국 학생들의 정서적 필요를 보다 잘 이해하기 위해서, 본 연구는 수학과 과학, 예술, 그리고 외국어라는 상이한 학습 영역의 네 고등학교에 다니는 학생들의 과민홍분성 프로파일을 알아보는 것을 목적으로 한다.

341명의 학생들에게 과민홍분성 설문지로 검사를 실시한 후 통계적 차이를 알아보기 위해 MANOVA가 사용되었다. 정신운동, 감각적, 상상적 영역에서는 예술 학교 학생들이 가장 높았으며, 지적 영역은 과학고등학교 학생들이, 정서적 영역은 외국어 고등학교 학생들이 가장 높았다. 학교들 간에 통계적으로 의미 있는 차이를 보였다. 각각의 전공 사이에도 역시 통계적으로 의미 있는 차이를 보였다. 정신 운동에서는 무용 전공의 학생들이, 감각적, 상상적, 정서적 에서는 드라마 전공의 학생들이, 그리고 지적에서는 과학 전공 학생들이 각각 가장 높은 점수를 보였다. 또한, 정신운동, 상상적, 지적 영역은 남학생들이 높았고, 반대로 감각적, 정서적 영역에서는 여학생들이 남학생보다 높았다.

주제어 : 과민홍분성, 한국 고등학생, 고등학교 영재